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PAGE 23

After Early Surge, Adoption of Linux For Retail Point-of-Sale Apps Slows

Lower-cost version of Windows for POS gives Microsoft users less reason to migrate to open-source technology

BY ERIC LAI

The holiday shopping season is bringing tidings both comforting and not so comforting to Linux vendors that are looking to break into the Windows-dominated market for point-of-sale terminals used in retail stores.

Linux's share of the retail POS market is nearing 10%, according to Greg Buzek, president of IHL Consulting Group Inc. in Franklin, Tenn. But he said the rate of the open-source operating system's gains is slowing, largely because of Microsoft Corp.'s introduction in May of a scaled-down version of Windows that is tailored for retailers and has a cut-rate price.

ONLINE

For more news about Linux, visit our Operating Systems Knowledge Center

But other analysts and some IT managers said that Linux is hitting a natural plateau. After attracting some early adopters, it now has to win over retailers that have invested heavily in Windows technology and Microsoft training for their IT staffers. Those companies may need strong reasons to make a complicated and potentially expensive switch to a different system.

"I always love those technology conversations where everyone assumes you have a 'green field' environment," said Robert Fort, IT director at Virgin Entertainment Group Inc., which operates 17 Virgin Megastores in the U.S.

Los Angeles-based Virgin is upgrading about two-thirds

Linux, page 16

Health Care Provider Nears End of 10-Year ERP Journey

Starts to realize cost savings from $174M outlay

BY HEATHER HAVENSTEIN

One year from wrapping up a rocky 10-year effort to standardize on packaged ERP applications across its 40 hospitals and medical centers, Catholic Healthcare West is finally seeing significant cost reductions and streamlined business processes.

The effort began in 1996 with a failed attempt to standardize on SAP AG's software. After spending $120 million, the company turned to Lawson Software Inc. for its ERP applications in 2002.

By next month the San Francisco-based health care system, the country's eighth largest, will have rolled out supply chain, finance and human resources applications from St. Paul, Minn.-based Lawson to 31 of its facilities.

finds consolidated systems easier to manage

The $54 million Lawson project, slated for completion by the end of next year, is replacing 200 internally developed and packaged legacy systems.

CHW officials said that the project has al-

ERP, page 53

Securing Card Data Isn't An Easy Sell

Retailers keeping customer info, despite new rules

BY JAIKUMAR VIJAYAN

Recent data compromises, such as one involving the Sam's Club wholesale chain, highlight the challenges that credit card companies face in enforcing the security standards that went into effect last July for all businesses processing credit transactions.

Sam's Club, a division of Wal-Mart Stores Inc., said in a statement issued this month that it was investigating a security breach that had exposed credit card data belonging to an unspecified number of customers who purchased gas at the company's stations between Sept. 21 and Oct. 2.

Beyond saying that its internal systems and databases weren't compromised, Sam's Club didn't elaborate on how

Credit cards, page 16

NEWSPAPER

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No Fun
In the Management section: Some CIOs say that the IT group that plays together stays together — and achieves better results along the way. Here's how to inject some levity into your workplace for fun and profit. **Page 44**

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Gift List From 'Security Claus'

SECURITY: Security expert Ira Winkler offers a list of gift ideas for the security-inclined — and those who could stand to pay a little more attention to security (and who couldn't?).
www.computerworld.com/security

When to Upgrade

OPERATING SYSTEMS: Two Avanade consultants offer tips for taking the best advantage of Microsoft's release cycle.
QuickLink a7020

Linux Cluster Goes Mainstream

STORAGE: When an IT manager needed to make data easier to access for his customers, he had no idea how much they would need, when they would need it or the size of the files they would create. His answer was to use a Linux storage cluster.
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Data Center Decisions

WEBCAST: Online degree programs offered by the University of Phoenix have experienced incredible growth over the past 10 years. Not surprisingly, back-end demands are enormous. University CIO Bob Carroll discusses data center expansion issues such as real estate costs and power supplies.
QuickLink a7000

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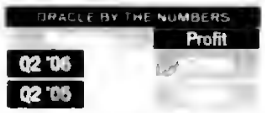
AT DEADLINE

Oracle Spree Boosts Sales, Cuts Profits

Oracle Corp.'s string of acquisitions this year helped it grow its second-quarter revenue by 19%, but was also a factor in a slight decline in profit.



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Bell South to Cut 1,500 Managers

BellSouth Corp. late last week said it plans to cut 1,500 management workers, or about 2.4% of its overall workforce. Most of those leaving are expected to accept voluntary severance packages. CEO Duane Ackerman said that BellSouth had worked hard to avoid the cuts, but many companies the size of BellSouth, including competitors, are already operating with less overhead and fewer management layers.

Microsoft Buys Portfolio Manager

Microsoft Corp. has agreed to acquire software and intellectual property from United Management Technologies Corp., a software and consulting firm in New York. Microsoft said it will combine UMT's technology, including its Portfolio Manager software, with Microsoft Office Enterprise Project Management. Terms of the deal weren't disclosed. When the acquisition closes, UMT employees will join the Microsoft Office Project unit.

IBM Moves to Speed Up Release of AIX Test Code

Seeks early user feedback on its Unix plans to help counter server rivals

BY PATRICK THIBODEAU

IBM IS changing how it develops and releases AIX, saying that it wants to give users and software vendors a bigger role in influencing the development of the Unix operating system.

As part of the effort, AIX users will have access to new operating system features as early as a year in advance of a version upgrade. Until now, they typically have seen a beta release three or four months in advance of the commercial shipment. But IBM last week said that it intends to make some of the new features planned for AIX 5.4, which is due in 2007, available for testing beginning in next year's first quarter.

"Instead of a big-bang release, what we're trying to do is give customers access to the code early," said Karl Freund, vice president of IBM's pSeries server line. The goal is to not only get new features into the hands of independent software vendors and users more quickly, but to also get early feedback on some of the concepts that the company is considering adding to the operating systems, Freund said.

'Open Community'

IBM is calling its approach an "open community development model," and it's establishing an AIX Collaboration Center in Austin as the focal point for the effort. The company said it plans to spend $200 million on hardware and development support for the center over the next two years.

What IBM is proposing "makes a lot of sense . . . if it works," said AIX user Kenneth Ebbe, assistant to the CIO at the University of Wisconsin at Madison. "What they set out to do with it and what they actually do with it can be two different things," said Ebbe, who is a former president of the Share user group for IBM shops. "But it sounds like they are trying to get the end users involved as quickly as possible and as broadly as possible."

Dan Olds, an analyst at Gabriel Consulting Group Inc. in Beaverton, Ore., said IBM's collaboration on AIX may benefit independent software vendors in particular. The quicker a developer can understand how the operating system handles functions such as virtualization, "the better the ISV's applications are going to be," Olds said.

Freund said the initial set of AIX 5.4 features due for early testing next quarter will include some of the workload management technology that IBM gained through its June acquisition of Meiosys Inc.

IBM isn't following the lead of Sun Microsystems Inc. and making AIX open-source, as Sun did earlier this year with its Solaris operating system. Freund ruled out open-source as an option and said he thinks open-source products tend to mimic advances made in proprietary ones. For instance, he said IBM worked to include AIX's dynamic logical partitioning technology in Novell Inc.'s SUSE Linux Enterprise Server 9 software.

But there's a pressing business reason for making the move to a more community-oriented development model, Freund said. Unix servers are under such pressure from commodity Windows and Linux systems, he said, that vendors such as IBM have to accelerate access to their technical innovations "in order for us to continue to drive successful growth."

Users Demand That Oracle Fusion Include IBM Support

Suite promises to combine acquired technologies

BY MARC L. SONGINI

As Oracle Corp. builds its Fusion best-of-breed application suite, it should make sure that rival IBM's hardware and software are an integral part of the road map, according to a survey of former J.D. Edwards & Co. customers.

Oracle has been crafting its Fusion suite from pieces of its applications and the PeopleSoft and J.D. Edwards software it acquired early this year. Oracle is also expected to incorporate technology gained from other acquisitions — including Retek Inc. and Siebel Systems Inc. — in Fusion, which is slated to be completed in 2007.

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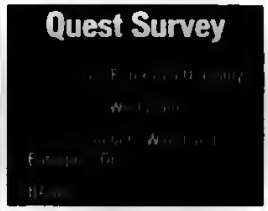
Quest, originally formed by users of J.D. Edwards software, announced the results of the survey last week.



Keeping the iSeries as a platform of choice for Fusion was more important to most respondents than pricing or functionality, Quest officials said. Many users of the former J.D. Edwards World and EnterpriseOne software rely on the iSeries hardware and want the option of keeping it, said Quest President John Matelski.

Infrastructure Freedom

Matelski, deputy CIO of the city of Orlando, said the survey data indicated that "most customers do not want to be forced to a new infrastructure and will consider other options if forced to." The city of Orlando runs EnterpriseOne financials on the iSeries.

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	Revenue	Profit
Q2 '06	$3.3B	$796M
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Hurd Eyes IT Automation as Boon for Users – and HP

Says data center costs can be cut; users doubt staffing needs will drop soon

BY PATRICK THIBODEAU
NEW YORK

In Hewlett-Packard Co.'s brave new IT world, some data centers will be run without people. And in the ones where IT technicians are still needed, workers will be able to manage ten times the number of servers they do now, thanks to increased automation.

That's the vision sketched out by HP CEO Mark Hurd at a meeting with securities analysts here last week. Hurd predicted that automation — not "labor arbitrage," or cutting labor costs through offshoring and other means — is going to become the leading IT cost-saving tool in the years ahead.

But HP faces some big hurdles in its effort to convince IT managers that Hurd's automation plan will actually lead to major benefits for users.

First, HP has to clean up its own IT operations, which it wants to use as a showcase to convince users that automation can make a difference.

The company plans to spend $2.8 billion on capital improvements during its current fiscal year, much of it on IT projects, including the consolidation of more than 85 data centers into just six facilities. That represents a 40% increase over HP's capital budget for the year that ended Oct. 31, when it spent just shy of $2 billion.

Second, HP is going to have to demonstrate that a ratio of one technician for every 200 servers is possible through the use of virtualization and automation technologies. The typical ratio now is about 1-to-20, said Ann Livermore, executive vice president of HP's Technology Solutions Group.

Eye on Support Ratios

Dave Dully, chief technology officer at Baptist Health System Inc. in Jacksonville, Fla., has 225 servers running Windows and NetWare, and seven technicians — or about one for every 36 machines. That's a relatively high ratio, helped by Baptist Health's standardized IT environment. But getting to a ratio of 1-to-200 "is not anything I can envision at this point," because of the uniqueness of individual servers, Dully said.

Enterprise management tools such as application provisioning and rapid deployment software should help improve the current ratio, Dully said. But he added that using virtualization technology to increase server utilization, which the health care provider is exploring, may lower the support ratios because it increases system complexity.

Larry Buettner, CIO at Wheels Inc., a Des Plaines, Ill.-based transportation fleet leasing firm, has four technicians managing 120 servers and doesn't see that ratio changing for the next five years.

Buettner said he does expect the systems administration parts of a technician's job to decrease. But he thinks there will be an increase in the amount of work related to administering third-party software and networks. Tools for automating those tasks are still in the early development stages, according to Buettner.

After listening to Hurd's speech, Gartner Inc. analyst Carl Claunch said the push for more automation is an industrywide phenomenon. But, he said, it will take three to four years for most data centers to begin to realize higher server management ratios, because they are "burdened with lots of legacy."

Rich Ptak, an analyst at Ptak, Noel & Associates in Amherst, N.H., said HP's long-term belief that one data center technician will be able to manage 200 servers is realistic.

"IT is on the cusp of applying all the power of IT that was directed outside its operations to its internal operations," Ptak said. He added, though, that HP will have to extend its OpenView line of management tools and develop software for managing dynamic IT environments in order to make such automation feasible. ▸

Reporter Matt Hamblen contributed to this story.

For Many Windows Users, Vista Plans Aren't a Priority

IT execs say they don't plan to start upgrades in 2006

BY ERIC LAI

Microsoft Corp. may get a feeling of déjà vu next year as it tries to persuade businesses to upgrade to its Windows Vista client operating system.

Corporate users were generally slow to deploy Windows XP, the desktop predecessor to Vista. Microsoft released XP in October 2001. But of 77 large companies surveyed by Forrester Research Inc. in July 2004, nearly half were still running Windows 2000 or other older versions on the majority of their PCs.

A similar survey of 56 users last July found that about 75% were running Windows XP on half or more of their PCs, Forrester said in a report this month.

Warning of "upgrade apathy," the firm said that only one-third of this year's respondents plan to start deploying Windows Vista when it becomes available in late 2006 or even when Microsoft releases its Service Pack 1 update. That's down from about 43% in the 2004 survey. In addition, 20% of the users surveyed this year said they don't plan to upgrade to Vista at all.

"For the first time in recent years, [many] firms now have a single version of the Windows operating system to support," Forrester analyst Simon Yates wrote in the report. "The prospect of beginning another migration next year isn't appealing to them."

Marc West, CIO at H&R Block Inc., last week said he doesn't plan to upgrade to Windows Vista until 2009 at the earliest. The Kansas City, Mo.-based tax preparer has 120,000 PCs running either Windows 2000 or Windows XP. The systems mostly run custom applications that wouldn't leverage the new features in Vista, West said.

"Some of the improved security features are of interest, but not enough to do a forced upgrade," West said, adding that he's evaluating whether to keep paying for Software Assurance, Microsoft's maintenance program that gives users access to product upgrades.

Patrick Moroney, CIO at Health Care Service Corp. in Chicago, said he doesn't have any Vista upgrade plans built into his 2006 budget. Moroney oversees 15,000 PCs running Windows XP at his company, which operates Blue Cross and Blue Shield health maintenance organizations in Illinois, Texas and New Mexico. Health Care Service has a Microsoft enterprise license that includes Software Assurance. But, Moroney said, "given our normal lag on introducing new enterprise-wide technology, the upgrade is more likely a 2008 effort."

Waiting for SP1

Likewise, FHLBank Topeka, a Kansas-based federal home loan bank, doesn't plan to start upgrading its PCs next year, said IT director Steven Naylor. "We typically wait until Microsoft releases Service Pack 1 of an operating system before we feel the software has been tried and tested enough," said Naylor.

In addition, some corporate users want to stick with Windows XP and the PCs running it for financial reasons.

"We're really trying to maximize our [hardware] investment," said Michael Koval, CIO at Long & Foster Real Estate Inc. The Fairfax, Va.-based real estate firm has about 6,750 PCs that are between one and four years old, and all of them are running Windows XP Professional. "My expectations are that I can get a minimum of six years, maybe more," out of the PCs, Koval said.

Koval doesn't expect to begin refreshing his hardware until 2007, at which time he will also start looking to upgrade some users to Windows Vista. He doesn't want to be a laggard on upgrading, though. "While it won't be Day One, I do plan to migrate quickly," he said. "Last time, we did wait almost two years after XP was released. This time will be different."

Both Forrester and Gartner Inc. are advising IT managers that even if they don't plan to deploy Vista next year, they should begin evaluating and testing it because of the length of time — 12 to 18 months — that's generally needed to prepare for a rollout. ▸

BRIEFS

Microsoft Fixes Flaw In Internet Explorer

Microsoft Corp. last week said it fixed a widely reported flaw in its Internet Explorer browser. The flaw had been used by attackers over the past few weeks to take over the PCs of unsuspecting users. The flaw was one of four IE bugs fixed in Microsoft's regular monthly software update. Security experts had known about the flaw since May.

EarthLink Buys VPN Services Company

EarthLink Inc. last week agreed to acquire New Edge Network Inc. for $144 million in an effort to add to its virtual private networking customers among small and midsize businesses. EarthLink projects that the deal will bring in $120 million in annual revenue. New Edge, which offers VPN services to businesses, will become a subsidiary of EarthLink and will retain its name. EarthLink will keep on all of New Edge's 345 employees.

Network General Names Gibson CEO

Network General Corp. has named Bill Gibson as its CEO. The CEO post at the maker of network and application performance analysis products had been vacant since October 2004, when CEO Bruce Framm left. In the interim, Mike Pope ran the company as president – a position he will continue to hold. Gibson had been chief operating officer at Crystal Decisions Inc., now part of Business Objects SA.

Microsoft Unveils Web-based IM

Microsoft has brought out a Web-based version of its corporate instant messaging software. The release provides access from remote or non-Windows computers. The new version, called Office Communicator Web Access, was introduced at last week's Interop New York trade show during a keynote by Gurdeep Singh Pall, corporate vice president of the Live Communications Team.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

You've heard of LANs, WANs . . .

. . . and SANs. Now add PANs to your vocabulary of "[blank]-area network" acronyms. Processor-area networks, or PANs, may catch on as the hot buzzphrase of 2006 if the utility computing market starts to heat up. That's the hope of Susan Davis, vice president of marketing and product management at Egenera Inc. in Marlboro, Mass. Her company sells a rack of server blades called BladeFrame, which isn't very different from what many other commodity blade makers do. But Egenera adds PAN Manager, a tool that creates "an identity of a server entirely in software," Davis says. She claims that PAN Manager lets you define an application's underlying operating system, network connections, memory needs and other hardware dependencies and then just walk away. PAN Manager determines which blade or blades the app will run on, provisions the devices appropriately, then boots up the app. A BladeFrame system links the I/O of the blades installed in it via a proprietary 10Gbit/sec. fabric. Naturally, all data is offloaded to a storage-area network. Today, you can have 24 blades in a rack. In the first half of next year, Davis says, Egenera will add the ability to link multiple BladeFrames. BladeFrames start at $89,900.

Bring your remote workers into . . .

. . . meetings, securely. By month's end, Seattle-based Aventail Corp. plans to release its Secure Collaboration appliance. According to Sarah Daniels, Aventail's vice president of product management and marketing, the appliance lets end users set up ad hoc but secure Web conferences, share videos and exchange instant messages. Meanwhile help desk workers can use it to access and take control of remote devices for troubleshooting and repair. Daniels says the appliance integrates with voice-over-IP software on PCs, enabling VoIP technology to be used in a secure, collaborative environment. The appliance, which starts at $4,995, can handle up to 500 concurrent users.

Aventail's device helps to secure collaboration among remote workers.

Spitzer spurs interest in software for . . .

. . . managing financial-industry assets. According to John Bosley, there are two software eras for developers of tools that help financial services firms manage the assets: the pre-Eliot Spitzer days, and the years since 1999, when the New York state attorney general began slapping fines on Wall Street firms for fraudulent practices. Bosley, who is chief operating officer at Bonaire Software Solutions LLC in Boston, says that in the Spitzer era, demand has been skyrocketing for his company's RevPort software, which documents the fees a brokerage can charge for, say, managing mutual funds. (Spitzer has nailed firms for overcharging their customers.) "We got very lucky because he brought a lot of attention to our business," Bosley says. He claims that RevPort helps users "make sure the back office is squeaky clean." To that end, Bonaire later this month will release a module that spits out standard reports for Sarbanes-Oxley Act compliance audits. Pricing wasn't available.

Catch misbehavior by insiders in your . . .

. . . Web apps in real time. You probably only have angels working in your company. But if you think there's a little devil or two lurking about, consider a security appliance from Covelight Systems Inc. in Cary, N.C. According to Bruce Pharr, the company's director of marketing, the Covelight Percept system looks for end-user behavior that could lead to identity or account fraud. The software in Covelight's appliance builds profiles of the online activities of up to 250 users and compares them against past behavior and against the actions of the end-user population as a whole. If something's amiss, the software warns the appropriate folks, indicating the possible transgression. Pharr says that by next June, Covelight will increase its onboard data storage capacity to 1TB, up from 250GB now. Pricing starts at $49,950.

Covelight's appliance detects and warns of end-user misdeeds online.

Syndicate enterprise data for more . . .

. . . browsers via an RSS tool. Later this month, KnowNow Inc. in Sunnyvale, Calif., will add support for the Firefox and Safari Web browsers to the eLerts feature in its Enterprise Simple Syndication (ESS) service. Internet Explorer users already can get eLerts. When end users subscribe to be notified, ESS announces changes to the data in their favored applications on the browser's tool bar. Ron Rasmussen, KnowNow's chief technology officer, says eLerts can also be used to send information such as updates to benefits plans to all browsers inside a company. In the new version of the service, the eLerts can be received in the Windows Deskbar as well. The service comes with a feature called Channel Guide, which lets users see which of the applications they have access to can leverage the eLerts feature. Pricing starts at $1,500 per month.

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Vendor Execs Take Stock of Evolving Storage Strategies

IBM's Monshaw talks about acquisition plans, virtualization and the threat from Microsoft

BY LUCAS MEARIAN

Andrew Monshaw, *general manager of IBM's Storage Systems and Technology Group, discussed the company's storage plans, the state of virtualization technology, the future of tape storage, and Microsoft Corp.'s venture into the storage business in an interview with* Computerworld *last week.*

What's changed from when you began this job a year ago? Our vision on information on demand is resonating. The strategy is working and [is being] validated by customers. [Also], virtualization is real this year. We're adding four to five customers a day on our storage virtualization offering, [SAN Volume Controller]. Five years ago, we thought people would sell virtualization. What's turned out is you sell the benefits of virtualization. It's a subtle difference, but from a business model [point of view], it's a big difference.

How many SAN Volume Controller customers are there today? We have about 1,600 customers.

How is the virtualization technology being used? Almost every customer uses it for [data] migration and uses it for utilization improvements. Interestingly, a high percentage of customers don't even know how much storage they have in their enterprise. Let's just start there. So a lot of this is geared around getting control of their infrastructure and then utilizing it.

This year has been the year of validation. NetApp renamed everything "V-Series." EMC came out and said, "We were just kidding, virtualization is important, and we're going to try to get this Invista thing out the door." So it's been validated by our competitors.

Are midrange systems cannibalizing your high-end systems sales? I don't see cannibalization. I see demand for both areas. Another way to think about that is, could robust, clustered midrange systems be a movement in the future? Very possibly. But there will be requirements for large mainframe systems and requirements for midrange systems.

Are disk storage systems eating into tape system sales? We've probably had our best tape [sales] year in years. Innovations will continue to drive tape going forward. The key is customers have to save a lot of this data. There's a lot of compliance regulations driving this. There are tons and tons of images.

Are you considering reselling Decru's DataFort encryption appliance technology through your reseller partnership with Network Appliance? We are evaluating this all the time. Our partnership with NetApp is off to a great start. We're having ongoing discussions about how to leverage each other's technology all the time.

How has Microsoft's expansion into storage affected your plans? We're keeping an eye on this space. It's clearly a vendor we need to continue to partner with. It's clear they're more active in the storage community, but it's not really clear where they're going yet. We're certainly not dismissing them. When Microsoft puts their mind to something, they get it done.

What role do acquisitions play in IBM's 2006 storage product road map? We did the NetApp agreement and the Aperi thing. Now it's time to get into the OEM alliance and acquisition space.

Would NetApp be a potential purchase for you? I'm not going to comment on that.

What is the state of the Aperi open-source storage management platform effort? There's a lot of interest. A bunch of us get it, and a few people don't get it. I think enough pressure in the system will force them to look at it from the customer's point of view.

When do you expect to see some product from this? By the middle of next year, we should be making some good progress. The board will define the code by the middle of next year that's been donated. Then we'll be off to the races. ▸

Roberson hopes to sign channel partners, add low-end offerings and improve NAS business

BY LUCAS MEARIAN

Despite taking some storage market share from EMC Corp. this past quarter, Hitachi Data Systems Inc. still trails several rivals, according to market research firm IDC. **Dave Roberson**, *president and chief operating officer at HDS, spoke with* Computerworld *last week about the company's plans to improve its standing in the industry.*

Why aren't you grabbing more market share? Well, let's look at where the market share is being gained. We're gaining a lot in what's traditionally been called the enterprise, which has three main players: IBM, EMC and us.

Our enterprise share is in the 40% range, depending on what set of figures you look at. The small-to-medium-business market [share] ... is more in the high single digits. So we're investing in building our channel capabilities, and we're investing in our new products and looking at a lot of things to gain share in that market.

How do you expect to boost your share of the midmarket? I don't think this is a technology driver. This is more of a go-to-market issue. I think we have the technology.

Part of it is price points — the ability to be aggressive with a price point. In this market, it's typically about half the price of the enterprise, give or take.

The other key driver in this market is people are a lot of times not looking for a storage-only buy.

When do you expect to sign up partners to improve your channels? You'll see something from us in the next six months, but don't necessarily expect to see another server partner.

Do you expect to have pure reseller partnerships? That would be the obvious other choice. We're really looking at who we can partner with who's not aligned or who is neutral enough, because we really need to be in the first position with someone — but someone who's large enough to make a difference.

How many operations are using HDS's TagmaStore array and its virtualization technology to pool heterogeneous storage, rather than just using the internal disk on the array? A quarter to a third of them. We've sold 1,700 systems, so that's a material number.

One of the things we're finding [that] people are using virtualization for a lot is data migration. Where it's more difficult to migrate other people's technologies, they'll use our engine for data migration — even on other people's [arrays]. But we do have people running in production with IBM, EMC and others that batch to tbe [TagmaStore] controller.

Do you have plans for any low-end products designed for branch offices in the next three to six months? That's an area that goes back to our channel discussion, where we need to have a good, viable, low-cost product to go into that market. And I think you'll see something from us in that six-month time frame.

Do you need to become more aggressive in your pricing? I think we need to be more aggressive in these low-end products, because price is a big driver there. We'll continue to be competitive, as we need to be in the enterprise, and certainly price is always an issue. But I don't think we'll get any more or less aggressive than we have been in the past when it comes to our traditional business.

What are your plans to improve your network-attached storage business? That's another area we've not executed well. There are a number of things we're working on.

In your six-month time frame, I think you'll see more from us in that arena as well. We need to have a stronger internal capability in that space. We may partner. ▸

_THE INVASION

_DAY 4: My data has a life of its own. I can't control it. I can't manage it. I can't...get out.

_DAY 5: I called for help. I tapped out a distress signal with an allen wrench. Do the guys upstairs know Morse code?

BRIEFS

Visto Files Lawsuit Against Microsoft

Visto Corp. has filed a lawsuit accusing Microsoft Corp. of improper use of its patented technologies. Visto alleged that Microsoft illegally uses the technology in software for accessing e-mail from phones and other wireless devices. Visto's suit, filed in the U.S. District Court in Texas, seeks unspecified monetary damages and a permanent injunction preventing Microsoft from shipping the software in question, Windows Mobile 5.0.

Google to Add 600 Workers in Dublin

Google Inc. will hire 600 people over the next two to three years at its European headquarters in Dublin. The new workers will fill positions in Google's operations, sales, engineering, legal, finance and human resources departments. A spokeswoman wouldn't reveal the total Dublin workforce, but she said the company employs 600 people in Europe.

NTT DoCoMo Buys Stake in Korean Firm

NTT DoCoMo Inc., Japan's largest cellular carrier, has agreed to pay $963 million for a 10% stake in KTF Co., South Korea's second-largest cellular carrier. The two hope to use the arrangement to develop services that can be offered to Wideband Code Division Multiple Access customers. The firms also expect to cut costs from joint standardization of equipment and exchanging technical and marketing expertise.

Adobe Plans Monthly Patch Schedule

Adobe Systems Inc. plans to begin releasing security patches on a regular, monthly basis starting sometime within the next six months. The monthly security updates are expected to cover most of Adobe's products, officials said. The company currently releases security patches on an ad hoc basis, but customers have asked for a more predictable schedule.

Diebold Machines Voted Out by Florida County

Election officials fear touch-screen system lacks accuracy, accessibility

BY MARC L. SONGINI

FLORIDA'S LEON County last week decided to scrap its investment in 160 Diebold Election Systems AccuVote optical-scan voting machines, citing handicapped access and accuracy issues.

The Leon County Commission voted unanimously to approve a request by elections supervisor Ion Sancho to swap in new optical-scan devices from Omaha-based Election Systems & Software Inc. (ES&S).

Sancho said the $1.2 million cost of changing systems is well justified. "To prove to voters that their votes are all counted as they intended them to be counted, yes, it's worth it," he said.

Sancho said the primary reason for ditching the Diebold machines is his lack of confidence in the accuracy of their touch-screen systems, which would have to be installed to ensure access for users with disabilities.

The county would need the Diebold touch-screen systems to comply with the federal Help America Vote Act and Florida state election laws. The HAVA statutes dictate that every precinct have a touch-screen or specially equipped optical-scan device that allows blind voters and other disabled people to cast their ballots unaided.

ES&S offers specialized optical-scan systems that are handicapped accessible.

The Diebold touch-screen e-voting systems have been certified by Florida state elections officials, but Sancho decided not to use them because of their lack of a paper trail. The county replaced Diebold's optical-scan machines as well so it could deal with a single vendor, ES&S, officials said.

A spokesman for McKinney, Texas-based Diebold downplayed the county's decision. "I think Mr. Sancho, for whatever reason, wanted to switch vendors," he said.

Meanwhile, Volusia County, Fla., has also decided against using touch-screen systems, and Miami-Dade County is considering scrapping a $25 million investment in ES&S touch screens. Both cited accuracy concerns because the technology doesn't generate paper receipts that allow voters to verify their votes.

Compliance Effort

To meet the regulations, Sancho plans to use a hybrid optical-scan reader called AutoMark, which is jointly offered by ES&S and its partner, AutoMark Technical Systems LLC in Lombard, Ill., AutoMark has an audio component that enables the blind to vote. Sancho said the vendor is working to gain state certification for the system.

In what Sancho called an unrelated action, a Leon County-sponsored hack attack on the Diebold AccuVote optical-scan systems demonstrated vulnerabilities in the memory card. That hacking event was sponsored in part by Black Box Voting Inc., which bills itself as a consumer protection group for elections.

Black Box Voting has been critical of the security of some e-voting systems, especially those that don't provide a paper trail of votes cast and those that can be tampered with in a way that could change the outcome of elections.

The Diebold spokesman dismissed those concerns, saying that the company hasn't been able to participate directly in the hacking attempts, which therefore invalidates them. ▸

OMG Pushes Standards for Security on Gov't Software

BY JAIKUMAR VIJAYAN

A report released this month by a task force within the Object Management Group outlines a proposed set of standards for verifying the security and integrity of software that's being acquired by government agencies.

The proposal by the task force, which includes representatives from the private sector and government agencies, is part of a broader effort to ensure that software products used by the government meet consistent and predefined security standards.

The OMG hopes to develop "a formal way of measuring if software is trustworthy," said Djenana Campara, who co-chairs the Needham, Mass.-based consortium's Architecture-Driven Modernization Task Force.

The Software Assurance Framework standards would give vendors and software buyers a consistent way to evaluate the design robustness, reliability, process integrity and configuration controls of a system, said Campara, who is also chief technology officer at Klocwork Inc., a Burlington, Mass.-based vendor of vulnerability analysis software.

Security Imperative

Such a framework is crucial for allowing software suppliers to submit claims about the integrity of their software and enabling purchasers to verify the claims, said Joe Jarzombek, director of software assurance at the U.S. Department of Homeland Security's National Cyber Security Division.

"The reason to have a standard is it tells you, 'Here's how [a vendor] can make a claim, here are the attributes we are looking for, and here are the things you need to include when making a claim,' " Jarzombek said. The DHS is involved in the effort to develop the standards framework.

Government systems that are used for national security purposes already need to go through the Common Criteria Certification process to determine whether they meet security requirements. The OMG's framework — which still has to go through a long approval process — would give another option to agencies that aren't mandated to use the Common Criteria, Jarzombek said.

He added that a separate systems and software assurance standard being finalized by the International Standards Organization will give government agencies yet another option for assessing software security.

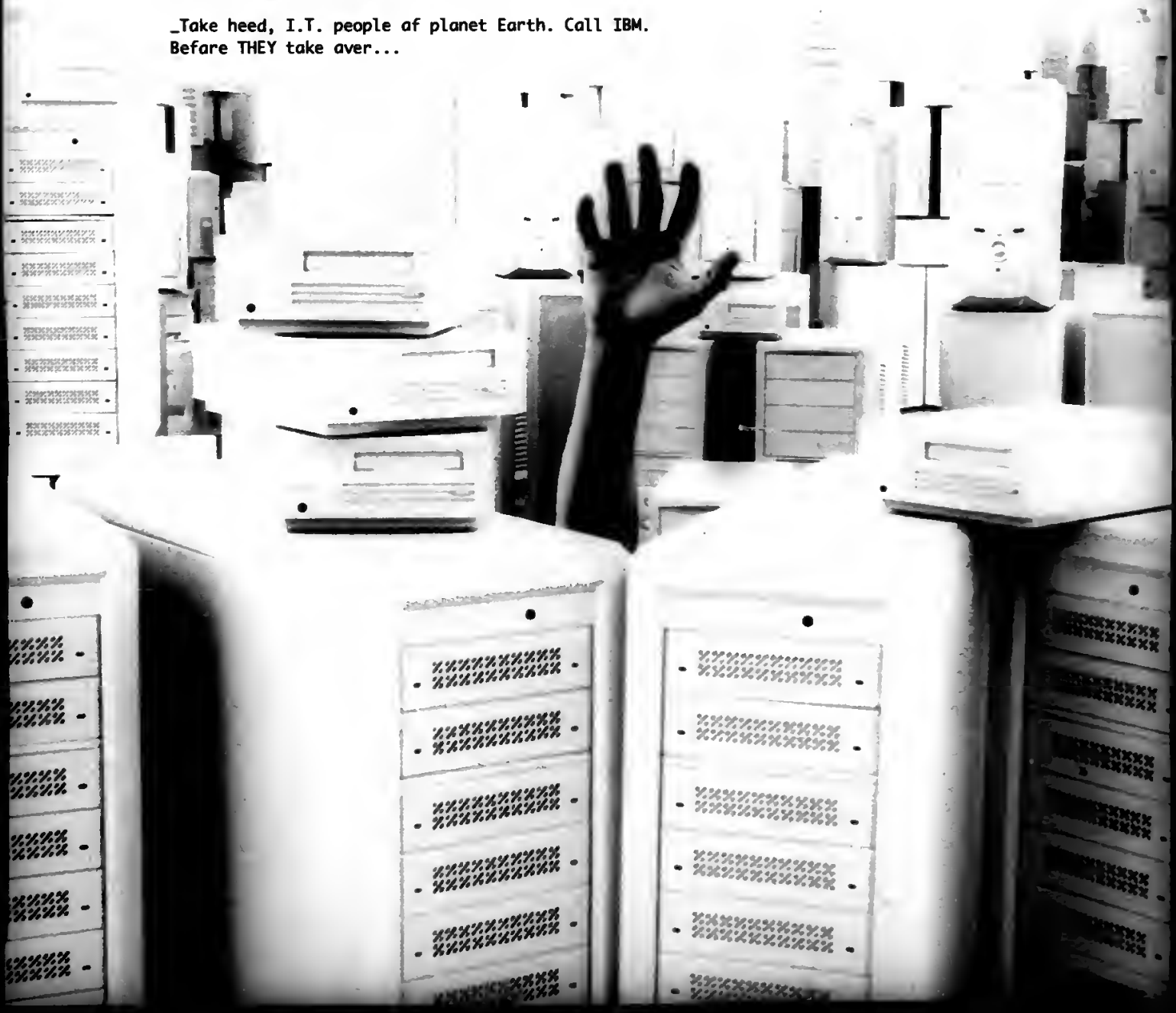
That standard is due to be approved sometime next year, according to Jarzombek. ▸

IBM.

_DAY 32: Can't find anything. Can't even find my desk. I'm drowning in a sea af data (gurgle).

_DAY 33: Finally. I've taken back cantral. I have simplified my starage management with virtualizatian technalagy from IBM, cansalidating the view af my data. Manageable. Simple. Genius.

_Take heed, I.T. people af planet Earth. Call IBM. Befare THEY take aver...



GLOBAL

An International IT News Digest

Court Upholds Fine Over Chinese IT Investment

TAIPEI, TAIWAN

THE HEAD of He Jian Technology (Suzhou) Co., a contract chip maker based in China, has lost his bid to overturn a fine imposed by the government of Taiwan for illegally investing in China's semiconductor industry.

A spokeswoman for the Taipei High Administrative Court said Hsu Jian Hwa, a Taiwanese national who is He Jian's chairman, must pay the fine of 2 million new Taiwan dollars ($59,800 U.S.) and withdraw his investment in the chip company. However, Hsu can appeal the decision, the spokeswoman said.

The court ruling is another sign of Taiwan's drive to curb illegal investments in China's chip sector. Taiwan's government carefully controls such investments, fearing that they could lead to job losses on the island or that its technology could be used to bolster China's military.

The government levied the fine against Hsu in February, saying that he failed to apply to authorities before investing in He Jian. Hsu was the third Taiwanese national to be fined for making such investments.

■ DAN NYSTEDT, IDG NEWS SERVICE

GLOBAL FACT

Total value of India's software and services exports for the fiscal year that ended March 31 up 34.5% from the previous year

U.K. Breach May Be Wider Than Expected

LONDON

IDENTITY THIEVES may have stolen more government personnel records than first thought as part of a security breach in which the alleged cybercriminals illegally routed tax credits to their bank accounts, British officials said last week.

The breach, disclosed earlier this month by HM Revenue and Customs, the U.K.'s tax authority, forced the shutdown of a tax-credits Web portal. The site remained closed last week as an investigation into the thefts continued.

The U.K. Department for Work and Pensions (DWP) initially said that the identities of about 1,500 of its employees may have been compromised in the breach. That figure is now believed to be higher, a DWP spokeswoman said, although she wouldn't provide a new estimate of the number of affected workers. Investigators are still trying to determine whose records were taken, the spokeswoman said.

■ JEREMY KIRK, IDG NEWS SERVICE

HCL Wins Services Deal With Integrator in Japan

BANGALORE, INDIA

HCL TECHNOLOGIES Ltd. last week said it has signed an agreement to provide a variety of offshore IT services to Exa Corp., a systems integrator in Kawasaki, Japan.

The IT work will be done at HCL's software development and services centers in Chennai and Noida, India. As part of the deal, HCL will implement large-scale migration and conversion projects and re-engineer legacy applications for Exa customers.

The Noida-based services firm said it will also develop and maintain manufacturing software for Exa, which is a joint venture of IBM Japan Ltd. and JFE Holdings Inc., a Tokyo-based steel manufacturer.

HCL estimated the contract's value at about $100 million over five years.

In another effort to boost its presence in Japan's IT market, HCL last week officially opened a technology design facility in Noida that was built through a joint venture with NEC Corp. ▸

■ JOHN RIBEIRO, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

ABN Amro Bank NV and MCI Inc. last week said they have signed a managed IT services contract valued at €500 million ($600 million) over five years. MCI will manage the Amsterdam-based bank's LANs and WANs in 25 countries and provide firewall services in 60 nations. Those services were previously managed partly by ABN Amro and through 380 contracts with IT providers.

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Powerchip Semiconductor Corp. in Hsinchu, Taiwan, said it will expand its production of a high-density flash memory chip known as AG-AND for Tokyo-based Renesas Technology Corp. Powerchip Semiconductor already makes 16bit AG-AND flash chips for Renesas. The new agreement extends production to 4Gbit densities.

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SAP AG has signed an agreement to resell Mercury Interactive Corp.'s LoadRunner software in an effort to help users optimize the performance and scalability of its business applications. SAP said LoadRunner can be integrated with its Computer Center Management System to automata application load testing.

■ JOHN BLAU, IDG NEWS SERVICE

Software Clears Spanish Site For Takeoff at Continental

BY TODD R. WEISS

After two years of manual translation work by contractors, Continental Airlines Inc. was still moving slowly toward creating a more fully featured Spanish-language version of its Web site. But the process ramped up in August, after the airline brought in software that automates much of the work involved in adding new languages to sites.

The software enabled Continental to go live on Nov. 16 with a relaunched version of its Web site that expanded the airline's very basic Spanish-language offerings to include its online flight-booking tool, said Ken Penny, director of Internet planning at Houston-based Continental and general manager of the Web site.

Continental is using WorldServer, an application developed by Waltham, Mass.-based Idiom Technologies Inc. The airline, which is running WorldServer on a Windows Server 2003 system, has tied the software to Microsoft Corp.'s Visual SourceSafe version-control system and a database of the English-to-Spanish translations done by the outside translators.

Penny declined to say how much the airline paid for the software, nor would he disclose what it has spent on the translation project as a whole.

Idiom doesn't handle the actual word-for-word translations. Instead, its software, which also runs on Linux and Unix servers, uses algorithms to automate the matching of English content to translatinns already prepared in Spanish or uther languages.

CONTINENTAL Web site has more Spanish-language content than it once did.

In addition to helping launch the initial translations, the software makes it easier to keep the Web site updated by automatically making changes to the Spanish pages as their English counterparts are modified, Penny said.

Other pages that are currently only in English, including ones for booking hotels and rental cars, may become available in Spanish in the coming months, he added.

Idiom's competitors include SDL International PLC, a Maidenhead, England-based vendor that offers translation services as well as translation management software.

Don DePalma, an analyst at Common Sense Advisory Inc. in Chelmsford, Mass., said Idiom's approach to wrapping its software around a company's existing content management system means that users "don't have to bulldoze what they've done before" to integrate translation management.

The idea of making Web sites multilingual is growing, said Run Rogowski, an analyst at Forrester Research Inc. He added that if Continental's business strategy "is to focus on different markets, then they've got the backbone on which to build." ▸

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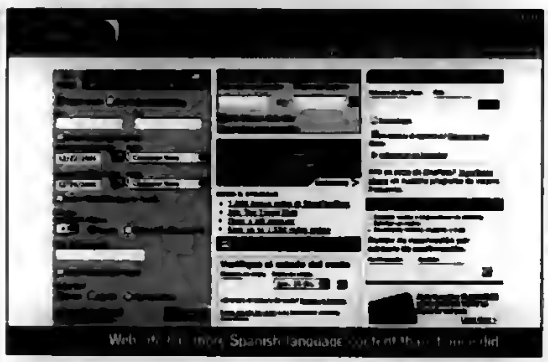
Idiom doesn't handle the actual word-for-word translations. Instead, its software, which also runs on Linux and Unix servers, uses algorithms to automate the matching of English content to translations already prepared in Spanish or other languages.



In addition to helping launch the initial translations, the software makes it easier to keep the Web site updated by automatically making changes to the Spanish pages as their English counterparts are modified, Penny said.

Other pages that are currently only in English, including ones for booking hotels and rental cars, may become available in Spanish in the coming months, he added.

Idiom's competitors include SDL International PLC, a Maidenhead, England-based vendor that offers translation services as well as translation management software.

Don DePalma, an analyst at Common Sense Advisory Inc. in Chelmsford, Mass., said Idiom's approach to wrapping its software around a company's existing content management system means that users "don't have to bulldoze what they've done before" to integrate translation management.

The idea of making Web sites multilingual is growing, said Ron Rogowski, an analyst at Forrester Research Inc. He added that if Continental's business strategy "is to focus on different markets, then they've got the backbone on which to build." ▸

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Linux

of the 300 POS systems used in its stores from 5-year-old green-screen terminals running IBM's 4690 operating system to Windows 2000 machines. The new systems will also run software called TransactionWare GM from Triversity Inc., a Toronto-based vendor that SAP AG acquired this fall.

"We run Windows Server 2003 and Windows XP on the desktop, so my administrators are very familiar with the Microsoft kernel," Fort said. He did strongly consider 360Commerce Inc.'s Java-based POS software running on Linux. But Fort said he ultimately decided that the slightly more expansive features offered by 360Commerce weren't worth the extra cost and hassle.

Virgin is running Microsoft's new Windows Embedded for Point of Service software on 206 in-store kiosks rolled out in October. Fort said that WEPOS costs 40% less than the older Windows XP Embedded technology and is easier to maintain. It also supports Internet access, multimedia applications and plug-and-play connectivity for handheld scanners and other devices used by POS systems, he said.

Market Positioning

WEPOS will eclipse other flavors of Windows as Microsoft's primary POS offering and prevent Linux's market share from exceeding 15% "anytime soon," Buzek predicted. Just 71,000 of the POS terminals sold in the U.S. last year ran Linux, making up 6% of the market, he said. He added that Linux's share should increase to 8% or 9% this year.

IBM's deal earlier this year to use Novell Inc.'s Linux Point of Service software in its flagship POS offering could boost the open-source technology's adoption rate by encouraging retailers to migrate from their 4690 systems, Buzek said, noting that 15% of the POS devices in use now are 4690s. But he expects Windows, which ran on 71% of the terminals sold last year, to maintain its share. "When push comes to shove, Microsoft still wins most battles," Buzek said.

MIKE PRINCE: Running Linux. "I never have to worry about things like" viruses.

Mike Prince, CIO at Burlington Coat Factory Warehouse Corp., has been running Linux on the 362-store clothing chain's retail systems since 2000. Burlington Coat now has 5,000 Wincor Nixdorf POS systems and 2,000 Dell servers on Red Hat Linux in its stores — all maintained by a four-person team at its IT facility in New Hampshire.

In addition to the store systems, the company has 45 servers running Novell's SUSE Linux operating system and Oracle Corp.'s 10g database in its central data center. Prince said he chose Linux for its stability, ease of remote administration and similarity to Unix.

"There's never been a virus in a store computer," he said. "I never have to worry about things like that."

But Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H., said Windows' lingering reputation for insecurity and instability is without merit. He also noted that many retailers look at the availability of POS applications and equipment, where Windows still has an advantage over Linux, more than they consider the merits of the operating system itself. "The operating system is a small piece," Haff said.

Ritz Camera Centers Inc. in Beltsville, Md., is a case in point — but on the Linux side of the ledger. In August, the 1,200-store chain announced plans to upgrade its 4,000 Unix POS terminals to SUSE Linux. Bob O'Hern, Ritz Camera's senior vice president of information systems, said this month that the retailer is moving to Linux partly because it wanted to run a Java application called Xstore from Datavantage Corp. in Cleveland. ▸

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Credit Cards

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But Corinne Sherman, vice president of card services at the Pennsylvania Credit Union Association in Harrisburg, said that based on alerts from MasterCard International Inc. and Visa U.S.A. Inc., Sam's Club appears to have been storing customer and account information from both tracks of the magnetic stripe on the back of cards. That information could be used by data thieves to create counterfeit cards that could then be used to commit fraud, Sherman said.

Especially troubling is the fact that a very large number of merchants still appear to be capturing and storing the full magnetic stripe information off of credit and debit cards even though doing so violates the new Payment Card Industry (PCI) security standards, said Ann Davidson, payment systems risk manager at CUNA Mutual Group, a Madison, Wis.-based company that provides insurance and financial services to credit unions.

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Of the more than 300 fraud alerts that MasterCard and Visa have each issued this year, the majority involved cases where magnetic stripe information was stored after a transaction, Davidson said.

"This is in direct violation of card association rules," Davidson said. "I would love to know why merchants are doing this." She added that CUNA Mutual has had several meetings with MasterCard and Visa to discuss the data storage issue.

In April, the insurer filed a lawsuit against BJ's Wholesale Club Inc. seeking to recover losses incurred as a result of a security breach that compromised 40,000 credit and debit cards. The lawsuit, which BJ's is contesting, alleges that the retailer stored account and customer information in violation of MasterCard's and Visa's regulations.

Many of the problems stem from the older point-of-sale systems that some merchants use to process card transactions, said Michael Petitti, a senior vice president at Ambiron TrustWave, a Chicago-based provider of security and PCI compliance services to the credit card industry. The POS systems often capture information that the merchants operating them don't even know about, Petitti said.

Under the PCI standards, all companies that accept credit cards must comply with 12 security requirements, such as encrypting transmissions of cardholder data, periodically running network scans, using logical and physical access controls, and doing activity monitoring and logging.

But there continues to be a lot of confusion about the steps needed to fulfill the requirements, the validation processes and the consequences for failing to meet the mandates, said Avivah Litan, an analyst at Gartner Inc.

"None of it is very clear at all, and it's proving to be very frustrating for the merchants," Litan said. "The card associations are just not set up to deal with what they have started." But she added that based on information from some of Gartner's clients, there are indications that the card associations and the banks that authorize merchants to process card transactions will start cracking down next year.

Incidents such as the one at Sam's Club are also a test of just how far Visa and MasterCard are willing to go to enforce the penalties associated with noncompliance, particularly when dealing with large merchants, said an internal financial analyst at a New York-based insurer.

"This opens up some questions on how objectively they will deal with this issue," said the analyst, who requested anonymity. "Will they pay favorable attention to large retailers like Wal-Mart but be willing in a split second to cut off the mom-and-pop liquor store?"

MasterCard and Visa didn't respond to numerous requests for comment last week. ▸

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computerworld.com/thisweek

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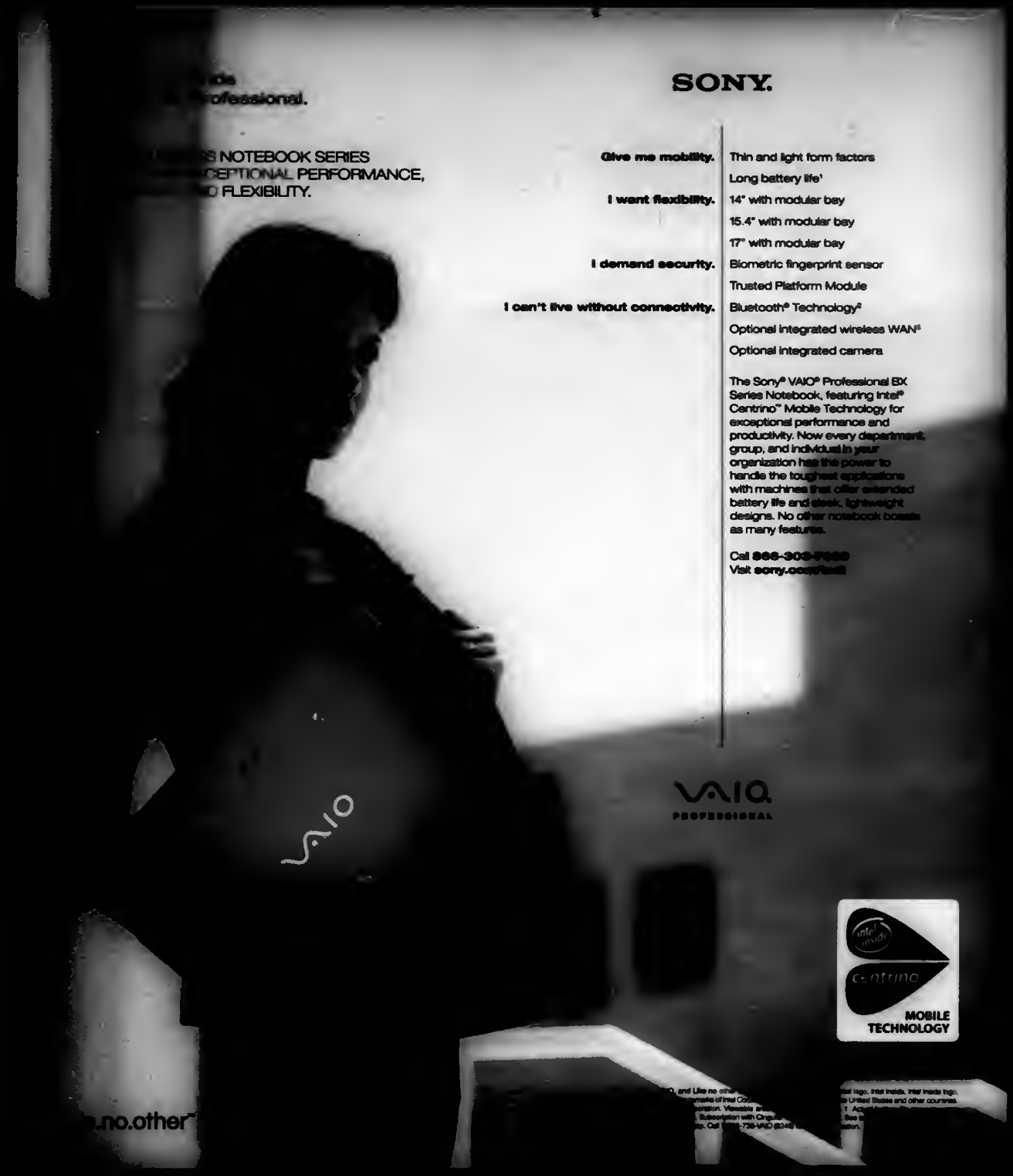
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Mandriva Eyes Corporate Users in Bid to Expand Its Linux Business

Third-place vendor moves to compete more broadly with Red Hat and Novell

BY ERIC LAI

MANDRIVA SA, now the third-largest Linux distributor behind Red Hat Inc. and Novell Inc., is pushing to move from its consumer and small-business market niches into the realm of enterprise IT.

Service fees from corporate customers accounted for 30% of Mandriva's $5.5 million in revenue for the fiscal year that ended Oct. 31, up from 10% in the prior year. In September, NEC Computers International BV, a Netherlands-based unit of NEC Corp., said it would bundle Mandriva Linux on the PCs and servers it sells in Europe.

And Mandriva CEO Francois Bancilhon said this month that the company will release Version 4.0 of its Corporate Server software by mid-2006, about 18 months after predecessor Mandrakesoft SA shipped the initial 3.0 release. He declined to comment about the upgrade's new features.

Paris-based Mandriva was formed earlier this year through the mergers of Mandrakesoft and two other Linux vendors: Brazil-based Conectiva SA and Maple Valley, Wash.-based Lycoris Inc.

Secure Upgrade

Dan McDonald, network infrastructure manager at Austin Energy, the electric utility owned by the city of Austin, primarily runs an older Mandrakesoft version of Linux on 20 servers. But he said he's about to upgrade to Mandriva 2006, an update that was released in October and is aimed at home users and small and midsize companies.

The Linux-based servers at Austin Energy run applications such as Exchange 2003 for e-mail, network management and security, as well as the utility's mission-critical supervisory control and data acquisition (SCADA) software.

The SCADA servers are blocked off from the Internet for security reasons, which made Red Hat Linux unsuitable, according to McDonald, who also tested that operating system.

"My Red Hat boxes were always running home to mama, always pinging the Red Hat Web site to download patches and updates," he said.

But despite favorable reviews from McDonald and some other corporate users, Mandriva will have a tough time challenging Red Hat and Novell in the Linux server market, said Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H.

"For supported Linux enterprise distributions in North America, Red Hat — with a smattering of Novell — is the only game in town," Haff said. "It's really hard to see what would suddenly cause [Mandriva] to become a success in North America."

Mandriva claims to have 6 million to 8 million users worldwide, with about 20,000 of them paying for support and maintenance. The company's Corporate Server software supports both 32- and 64-bit hardware and starts at $369 per server. Users of that product include French oil company Total SA, France Telecom SA, the city of Milwaukee, NASA and the U.S. Geological Survey, Bancilhon said.

Mandriva's other large customers include London-based HSBC Holdings PLC, which has 1,100 servers running Conectiva's version of Linux, and the public schools in Sao Paulo, Brazil, which have installed 19,000 Conectiva-based desktops and servers.

But most of Mandriva's corporate customers in North America are small or midsize companies, such as Indianapolis-based Global Transport Logistics Inc., which runs an older Enterprise Server version of Mandrake Linux on five servers.

"Most haven't been rebooted in three to four years," said Brent Meshier, the company's network operations manager.

TECHNOLOGY DETAILS

Mandriva 2006

- Support for Intel Centrino mobile technology
- The Kat desktop search tool, plus an intrusion detection firewall and autoinstallation program
- Full integration of Skype Technologies SA software for voice over IP calls
- Management tools developed by Conectiva, plus a graphical user interface created by Lycoris

Share Members Draw Up Vendor Wish List

BY PATRICK THIBODEAU

Share, a user group for IBM mainframe sites, has assembled a wish list of features that members want from vendors. The list includes enterprise open-source software, server consolidation features, interoperable calendaring capabilities and a standards-based distributed file system, said **Robert Rosen**, *president of the Chicago-based group and CIO of the National Institute of Arthritis and Musculoskeletal and Skin Diseases at the National Institutes of Health in Bethesda, Md. In an interview with Computerworld last week, Rosen talked about the list and why it was created.*

By creating a wish list, are you trying to make Share and user groups more relevant? I don't think user groups have become less relevant. I think what we're really doing is getting the word to a broader audience about the kinds of things that Share is involved in and duing. This has to do with the big IT shop, the enterprises. Where are their pain points? Where would they like some relief?

Why is a list created by Share members important? It's important because we're the people in the trenches. We're the people living with these problems, and we need these kinds of solutions.

How important is vendor cooperation among Share members? Nobody has a one-vendor shop anymore. [Vendors] have got to work together, and standards are the only thing that is going to make this work. We are seeing more and more of our people interested in open systems and very interested in standards.

Are Share members aggressive enough in demanding interoperability from vendors? I am sure there are some that are aggressive enough and others who aren't. I think that's one of the strengths that Share brings to the process. We can leverage the voice of these managers in a more concentrated way. We're representing 2,200 organizations — 80% of the Fortune 500. That's a strong voice.

Do you intend to publicly recognize vendors that create products that meet your interoperability requirements? Typically, those things are presented at Share meetings. [That's] one of things that make the user group relevant: You can get that information and participate in those kinds of discussions.

How would you rank the items on the list? It really depends. Different companies are going to have different pain points. More and more, as we move to the mobile stuff, battery life has become a bigger and bigger issue. I think easier use of open software — so it installs, operates and [can be managed so it] works in an enterprise — is going to be one of the big areas.

What open software in particular? Certainly, Linux is one.

You don't think that Linux is enterprise-worthy? It still takes too much tweaking to really get up to where you want it be. Some people have that down, but especially in the small-to-midsize marketplace without big IT staffs, that's an issue. The one thing that is going to be really interesting is OpenOffice. Everybody says that buying Microsoft Office is expensive, but the retraining cost to go to another package is astronomical. So I don't know how you work all that out.

Is there anything on this list that is IBM-specific? The Parallel File System [a high-performance cluster file system] is one area we are seeing a lot of interest in.

Another one is the cell processor for high-performance computing. Granted, most enterprises don't view themselves as HPC organizations, [but], in fact, more and more of them are.

The other one — this was interesting — [is that] you want to ensure continuation of people coming into the IT field. You keep hearing that the IT field is not a good field to go into anymore, yet my personal belief is that it still is.

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DON TENNANT

Skin in the Game

I'VE MADE NO SECRET of my aversion to vendorspeak. The reason is simple: Vendorspeak muddies rather than clarifies the vendor's message, and deciphering it wastes way too much of your time and ours.

The most frequently used term in the vendorspeak dictionary is, of course, *solution*. It's also the most annoying, simply by virtue of its overuse and meaninglessness. It's typically used as a synonym for *product*, which means it is, at best, a possible or potential solution. Until it solves my problem, it's a product and nothing more.

If *solution* is the most exaggerated term, *partner* is a close second. Vendors just love to refer to themselves as partners to their customers. Yet typically, by almost any measure, the relationship is anything but a true partnership. If I spend an obscene amount of money for a product and I don't get a return on my investment, my company loses money and I may well lose my job. Meanwhile, my vendor's sales rep is earning interest on the bonus he received at my expense. He loses, at most, a license renewal. Some partnership.

But suppose the vendor did lose something. Suppose I stipulate in the contract that if I don't get a certain return on my investment within a specified time frame, I don't pay a dime. By the same token, if my payback exceeds a certain dollar figure, I pay an even more obscene amount of money. Now that's a partnership.

The point is, the vendor has to have some skin in the game. And you should start thinking about demanding just that.

When negotiating software licenses, for example, be aware that the competition for your business can often be fierce. Many software vendors recognize that users are getting fed up with nonsensical licensing arrangements (having to pay the vendor more money if a system is simply moved from one location to another, for example). And they know they have to end the craziness.

ASG, a systems management software vendor in Naples, Fla., certainly appears to have gotten the message. "Customers have reached the [limit] of what they're willing to pay for enterprise software, and they're looking for alternatives," acknowledges Jim Bladich, ASG's vice president of sales operations. "IT expenditures are going up as a percentage of revenue, and it's beginning to be scrutinized."

To its credit, ASG is going the skin-in-the-game route. Last summer, it introduced a revenue-based licensing model that may be a compelling alternative for companies that are dissatisfied with traditional, capacity-based pricing. There are various options under the model, according to Bladich, including one that enables the user company to lock in the fee so that if it's projecting steady revenue growth, the licensing fee stays the same for the duration of the contract.

But consider this: Much of what ASG does is geared toward improving business performance by means of offerings such as business service management software. And better business performance stands to generate more revenue. So what's especially intriguing about ASG's revenue-based model is the case in which a contract stipulates that the fee paid to ASG goes up or down based on the track of the user company's revenue. Suddenly the vendor has a real stake in the customer's performance.

The model's not perfect, and it's not for everybody. But it's a positive step because it's the result of ASG listening to its customers. And vendor listening is a welcome respite from vendorspeak. ◗

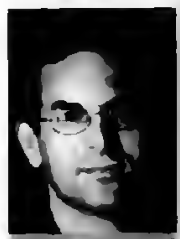
Don Tennant

JOHN D. HALAMKA

The Peter Principle for Software

IN THE late 1960s, Laurence J. Peter created the "Peter Principle," postulating that managers are promoted to their level of incompetence, causing organizations to falter. As I reflect on the software tools I'm using in 2005, I've concluded that there is a software corollary to the Peter Principle — software evolves to the point that it's unusable.

I'm writing this column in Notepad. Why? Have you tried writing an outline, end notes or an indented bulleted list using the latest word-processing software? Wizards and autoformatting tools try to anticipate what you're typing and in the process irreversibly scramble your work.



JOHN D. HALAMKA is CIO at CareGroup Health System, CIO and associate dean for educational technology at Harvard Medical School, chairman of the New England Health Electronic Data Interchange Network, CIO of the Harvard Clinical Research Institute and a practicing emergency physician. Contact him at jhalamka@caregroup.harvard.edu.

Our modern operating systems contain vast numbers of CPU-consuming add-ons: a wagging dog that searches for your files, invisible background processes that constantly download patches and user-interface tchotchkes such as thumbnail previews of your multimedia. With all this increased complexity comes a lack of reliability, perpetual security holes and poor performance. Boot times are long, lockups are frequent, and viruses are epidemic.

Although my computer today is 100 times more powerful than what I had in the late '90s, my current environment has less speed, lower productivity and higher cost of ownership than my Pentium running Windows 98 Second Edition and Microsoft Office 97.

In my view, it's time to rethink what the industry is producing with thick-client software, bloated with a spiraling number of esoteric features.

DON TENNANT

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Although my computer today is 100 times more powerful than what I had in the late '90s, my current environment has less speed, lower productivity and higher cost of ownership than my Pentium running Windows 98 Second Edition and Microsoft Office 97.

In my view, it's time to rethink what the industry is producing with thick-client software, bloated with a spiraling number of esoteric features.

What we need is "Google Office With Ajax for Linux" or "Microsoft Office Lite" — a Web-based, server-centric, thin-client application suite that isn't perfect but is good enough.

This is not about Microsoft vs. open-source. It's about creating highly reliable, usable tools that run anywhere, anytime. It's about reining in the sales and marketing departments of software vendors whose revenue-growth targets propel them to offer feature-filled upgrades more often than the customer base desires.

Here are a few examples:

■ In Massachusetts, 500 doctors were offered their choice of electronic medical record systems at no cost. They were given a menu that ranged from thick client/server applications to hosted solutions based on Citrix to thin-client applications hosted entirely by an application service provider. Amazingly enough, nearly 100% of the doctors chose a thin-client, Web-based application, hosted and maintained entirely on the server side. They felt that less infrastructure, less installation and less local patching was ideal.

■ As CIO at Harvard Medical School, I provide e-mail to 10,000 faculty members, students and staffers, nearly half of whom run Apple hardware. Entourage, the Outlook equivalent for the Macintosh, lacks just enough important features to keep my Apple users unhappy. Google's Gmail isn't perfect, but it's certainly good enough for most users and runs with the same features everywhere.

■ The iPod ClickWheel is a perfect example of less being more. In the latest version of the iPod, buttons have been removed, and what remains is a simple, intuitive, highly usable interface that gets the job done.

At dinner with Microsoft executives last year, I asked them to consider a lighter, cheaper, highly reliable version of Microsoft Office. They responded that surveys indicate that corporate customers use 90% of Office's features, so there is no one set of minimal features to include in a simplified product. I suspect that a closer look at this data would illustrate that a very few power users need advanced features but that the vast majority need the type of features included in the Gmail editor — fonts, colors and basic formatting.

In 2006, let's break the cycle of creating more complex, less reliable, less usable software and agree that less is more. I encourage the software industry to take a lesson from Gmail and other successful thin, good-enough applications. Do we need Longhorn/Vista and a new 3-D graphics engine-driven user interface with so many lines of code that it will be a challenge for even the most brilliant programmers to maintain?

We need the Toyota Prius of software — "Google Office With Ajax for Linux" or "Microsoft Office Lite" — and not the Hummer. ▶

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READERS' LETTERS

Trying a New Approach to IT

I FOUND MICHAEL Hugos' column "The Rhythm of the Quarters" (Oct. 17) to be informative and a good read. I work for a chain of upscale health clubs. The business people are very savvy at what they do, but IT is considered more a necessary evil than a strategic arm.

Over the 18 months that I've been here, I see that perception slowly changing, but getting a sufficient budget is quite an arduous process. Perhaps that is as it should be, but I'm going to consider Hugos' approach for 2006.

Ed Cohen
Director, IT services, The Wellbridge Co., Greenwood Village, Colo., ecohen@wellbridge.com

SOAs Can Help Lead to Agility

I READ WITH interest the opinion piece "The Loosely Coupled Enterprise: The Secret to Speed and Flexibility" (*Computerworld.com*, Oct. 20). While there are development reuse benefits to approaching loose coupling without service-oriented architectures, the most dramatic benefit of loose coupling – business agility – is achieved through SOA-style intermediation.

An intermediary acts as an intelligent "switchboard operator," which can route service requests to the appropriate service. This routing can be done on the basis of identity, service contracts, service-level agreements, load balancing, content-based routing, service delivery preferences and a host of other parameters. This style of dynamic late binding at the intermediary level enables organizations to go beyond development reuse and into SOA governance and business agility.

Miko Matsumura
Vice president of technology standards, Infravio Inc.; chairman, OASIS SOA Blueprints Technical Committee, Cupertino, Calif., miko@infravio.com

Is Your Work Worthwhile?

THE OCT. 24 salary survey asked what matters most to you about your job. Missing from the list is the factor most important to me. I have quit jobs that paid well and were technically interesting and challenging but didn't make me feel like I was contributing anything really important.

Today, I feel very passionate about my work, since it contributes to a worthy goal of safe, economic, reliable and hassle-free gas and electricity delivery. In future surveys, you might consider including a "Job is worth doing" option for your respondents. Though I might want to leave a job if it did not offer enough of the other factors listed, what matters most to me is that I'm working on something important.

Bob Hawker
IT consultant, Baltimore

Alternatives to Two-Factor Exist

TRUE TWO-FACTOR authentication is a lot to ask of consumers ("Fear of Phishing Hurts Banks," *Computerworld.com*, Oct. 25). Its slow adoption by corporations shows the resistance people have for it.

An approach that may be viable is full-machine fingerprinting, i.e., using a full-device fingerprint as a second factor, the same way that many publishers use machine IDs to lock their software licenses to specific machines to fight software piracy.

Systems like this are being investigated in financial institutions like the Chicago Board of Trade and by telecommunications vendors.

Ric Richardson
Freelance technologist, R2Labs, Huntington Beach, Calif., ric.r@r2labs.com

Alaska Beckons Data Centers

AN INTRIGUING idea once brought forth was setting up huge data centers near the North Slope oil fields here in Alaska – free air conditioning using cooling tubes buried in the ground or exposed to ambient air ("Redefining Cool," Oct. 31). The excess heat could be used to help heat the facility or melt snow for water.

Plenty of natural gas for energy, and it's a great point from which to connect fiber to the rest of the world. Plenty of local support services in terms of air transportation and road access.

Typical local work schedules are two weeks of 12 hours on, 12 hours off and then two weeks off. Commute time from home is a bit longer than most jobs but involves little actual driving. And the view is unique. It also appears to make sense.

Bob Hoffman
Anchorage, Alaska

Recalling the Wild, Wild East

I LIVED IN Hong Kong from '82 to '93 and started the first computer club, SEAnet. Of Don Tennant's editorial "Opium Wars" (Nov. 7), I can only say, how true.

Sham Shui Po was a mandatory haunt, since there was no legitimate distribution of software. I took a film crew from the CBC into the Golden Arcade around '85, when software piracy was really getting going. We managed to film for about 10 minutes, when tattooed guys with cricket bats showed up and suggested loudly in Cantonese that our health would be better outside the building.

I also remember inviting a rep from Ashton-Tate (the dBase guys) to one of our meetings to discuss why it cost double to buy the software in Hong Kong and why there was no support. He had a rough evening.

Waleed Hanafi
Consultant, Singapore

Timely Data Has Long Been an Issue

DIRTY DATA is only one aspect of building coherence in information systems and business organizations ("Dirty Data Blights the Bottom Line," Nov. 7). IT has been charged with delivering timely business information since time immemorial but falls far short of this goal.

Timely information is, of course, data that is accurate, accessible, coherent, comprehensible, timely and useful. IT continues to employ automation paradigms that date to electronic accounting machines.

Mechanizing tasks is no longer a viable strategy. Perhaps that is why new development projects are often outside the scope of many IT departments.

Walt Sawka
CEO, CoherentEnterprise LLC, Ringwood, N.J., wsawka@coherententerprise.com

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TECHNOLOGY

12.19.05

QUICKSTUDY
Deep Web
The deep Web is a vast sea of information that can be accessed via the World Wide Web but can't be indexed by traditional search engines. Also known as the "invisible Web," it's estimated to be 500 times as large as the "surface Web." **PAGE 28**

SECURITY MANAGER'S JOURNAL
Rising to a Higher Standard Isn't Easy
In response to complaints that someone in-house might be snooping on employee computers, C.J. Kelly feels the need to implement two best practices: separation of duties and the principle of least privilege. **PAGE 34**

OPINION
The Diskless PC Revolution
Curt A. Monash says the use of flash drives may soon mean that operating systems and applications will be joining data in users' pockets. **PAGE 36**

Come Together Carefully

ANN GIRTEN

As the available options multiply, it becomes increasingly important for businesses to match collaboration tools to their needs.

ROBB CHAPMAN, an IT specialist at the Centers for Disease Control in Atlanta, discovered how complicated the choice of a collaboration tool can be when he became involved in the CDC's effort to purchase software that would let researchers work more effectively with universities and state health agencies. The options proved so numerous that the agency hired an outside consultant to sort through all the candidates — an effort that took six months.

"Different vendors had different bundles of functions — discussion boards, Web conferencing, document sharing," Chapman recalls. "It got quite complicated for us to determine whether we needed a single, integrated product with all of the functions or several best-of-breed products."

In the not-so-distant past, the options for collaborating with customers and colleagues were fairly limited: e-mail, file transfer protocol (FTP), perhaps a listserv for group discussions. Today, the choices are more numerous — and more difficult to sort out.

Chapman's sense of confusion about selecting a collaboration product is shared by many IT managers, and for good reason. There are close to 1,000 vendors in the collaboration market, according to David Coleman, managing director of Collaborative Strategies LLC in San Francisco. "There are way too many vendors," he says. Coleman projects that sales of collaboration software, services and related hardware will reach $40 billion in 2008, with an average annual growth rate of 13%.

The products offer a range of features, such as instant messaging, virtual team collaboration rooms, Internet audio and video, screen sharing, wikis for group posting and editing of content, blogs, whiteboards and repositories for accessing common documents. Products may have one or many of these functions bundled together.

To complicate matters further, many large organizations treat collaborative tools as a departmental decision, allowing line-of-business managers to bring in whatever they want. That has led to a proliferation of products within companies, many of them totally unknown to corporate IT. Coleman says most large companies have 10 to 12

Continued on page 26

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>
> **ROBB CHAPMAN** (LEFT), IT SPECIALIST, CENTERS FOR DISEASE CONTROL

EMC²

> "E-mail is often used for collaboration when it shouldn't be. Often, [employees] just don't understand that there are better things out there."
>
> **DAVID COLEMAN**, MANAGING DIRECTOR, COLLABORATIVE STRATEGIES LLC

Continued from page 23
collaborative applications.

"It's been line-of-business adoption, with a manager signing the contracts," notes Robert Mahowald, an analyst at market research company IDC.

Lower-level employees, on the other hand, tend to stick with e-mail, resisting newer communication tools. "E-mail is often used for collaboration when it shouldn't be," notes Coleman. "Often, they just don't understand that there are better things out there."

Who Needs It?

The CDC's role as both a research agency and crisis management leader in the event of a regional or national health emergency makes it an obvious candidate for collaborative technologies. The agency chose SiteScape Inc.'s Enterprise Forum, which allows it to collaborate with outside health agencies and research groups, as well as quickly create a virtual "war room" to deal with a health crisis. With SiteScape, the CDC can create a team work space and accounts for new team members, share documents and schedule Web meetings and notify attendees via e-mail, automated phone calls and SMS messages. Related groups may be created to coordinate emergency responders and disseminate information to hospitals. Later, the workspace can be archived for historical and auditing purposes.

But it's not always so clear that a business can use collaborative technologies. There are general organizational characteristics of companies that need collaboration software.

Distributed teams. Few large organizations have just one facility, and they need a way to make it easier for employees in different locations to collaborate. Their options include simple tools such as instant messaging applications, which workers can use to get quick answers to urgent questions, and more elaborate software such as virtual team rooms where employees can collaborate on shared projects.

Such is the situation in the corporate Internet group at financial services firm J.P. Morgan Chase & Co. With IT staffers scattered among four U.S. cities, employees have had to use e-mail and the phone to work on Web projects. But e-mail isn't ideal for sharing large files or holding threaded group discussions. So the Internet group implemented Microsoft Corp.'s SharePoint Services, which enables staffers to remotely access a central repository of documents and create Web sites for different projects.

"We store test plans, project plans, requirements documents, issues logs, status reports, etc.," says Michael Brown, senior project manager in the corporate Internet group. "We have architects in different cities, so all want to have a site where they can share information."

Down the road, they'll add a wiki — or HTML-based pages that team members can use to post content online — and a blog for publishing employee commentary.

Road warriors. Business travel will never go away, but employees can save considerable time and money with virtual-meeting technologies.

Pemco Aviation Group Inc. uses Oracle Content Services for webcasting, as well as fax, phone, e-mail and instant messaging. Thanks to the webcasting feature, the Birmingham, Ala.-based company's engineers now log fewer

frequent-flier miles visiting customers.

If they want to make a customer presentation, they start the Web conference at their desk, turn on recording, do the presentation and put it on the Web site," says John Griffith, Pemco's director of IT, noting that they can also opt to do a live webcast.

Likewise, Dow Corning Corp. in Midland, Mich., has noticeably reduced employee travel through the use of both Documentum Inc.'s eRoom for document collaboration and WebEx Communications Inc.'s webcasting services for online meetings and seminars.

WebEx has substantially decreased the need to travel for marketing presentations, technical support and partner training, notes Ben Martinsun, enterprise application engineer at Dow Corning. "It's used to troubleshoot problems by utilizing the desktop and application-sharing functionalities," he explains. "And some internal business [units] have moved to WebEx to host distributor training."

Paperwork overload. The Babcock & Wilcox Co. (B&W), a $1.4 billion manufacturer of power-generation equipment, had a document management problem. Each order for a new piece of equipment inevitably created a flood of documents — contracts, product specifications, purchase orders, product designs and documentation. Most of these were sent via FedEx or uploaded to one of the thousand or so FTP sites created by B&W employees. Keeping track of the location or current version number of any particular document had become extremely difficult.

"If I sent a drawing out to somebody, I had absolutely no idea what they'd do with it," says Penny Sherrod, B&W's director of enterprise systems. She also notes that the company incurred significant costs by express-mailing documents back and forth.

So a couple of years ago, B&W began moving its documents online. The IT staff first deployed a MatrixOne Inc. document management application and then integrated that with BEA Systems Inc.'s AquaLogic (formerly from Plumtree Software Inc.). AquaLogic provides additional features, such as the ability to integrate multiple back-end applications and, on a more basic level, a place to post company news.

When the implementation is complete, in early 2006, both suppliers and customers will be able to access product documents as well as check the status of purchase orders and requests for quotations.

Training without travel. When employees need to take a class to earn a degree, obtain certification or just hone their skills, they often must travel to a classroom. But the advent of virtual classrooms promises to make professional development a great deal easier.

It's making learning easier and more enriching for students and staff in the Nechako Lakes Schools District, which is located in a rural part of British Columbia. Thanks to computer-based learning, students can take classes offered only at other schools in the district.

The program has expanded from 13 to 1,200 students, who take part in discussion forums, webcasts, live chats and breakout sessions using the Lotus Domino Virtual Classroom. Instructors also use the Lotus Learning Management System to handle class scheduling, course creation, enrollment and other tasks.

Ernie Mannering, director of information services and technology for the district, says the virtual classroom provides opportunities for students to interact with a larger group of students, as well as absorb lessons better. "It gives students more time to compose their thoughts," he says.

Of course, the biggest benefit is being able to take a class via a computer rather then driving miles to a physical classroom — a benefit that business professionals can appreciate as well.

Once you have a basic idea of what type of software you need — webcasting for meetings or document management for paper-intensive projects — the next step is to evaluate the technical requirements of the products.

Integration is one issue to consider; many collaboration products have to interoperate with others, such as a document management package and a portal, or IM and e-mail.

"One example is your typical groupware application, which has calendaring and scheduling, a company directory and things like that. Those bits and pieces need to be pretty tightly integrated," observes IDC's Mahowald.

Then comes maintenance. Applications that bundle multiple collaborative features may be easier to maintain than a collection of technologies from different vendors.

"Because they integrate so well together, maintenance is easier. I didn't have to add anyone to support Oracle Content Services," says Pemco's Griffith. "I've got the same group of people doing e-mail, calendar, Oracle Content Services, instant messaging, voice mail, Web conferencing and fax."

Hardware, of course, is another issue. Will the application require its own server, or conversely, does it need to share space with your database? If you opt for webcasting, can your network handle the bandwidth demands?

How about security? At the CDC, IT staffers had to ensure that any application would work with the extranet security framework already in place.

And don't forget scalability. Your collaboration tool may start as a departmental application, but someday you may want to expand it to the entire company. Can it scale?

The choice really depends on three basic factors, says Brown at J.P. Morgan Chase. "It comes down to how dispersed your team is, what type of collaboration you need to do — like do you need to collaborate on documents or just share access to them — and your budget," he says. "Once you know what the word *collaboration* means to you from a process perspective, then you can start looking at your budget and what technology is out there." ▶

Hildreth is a freelance technology writer in Waltham, Mass. She can be reached at Sue.Hildreth@comcast.net.

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>
> **MICHAEL BROWN**, SENIOR PROJECT MANAGER, J.P. MORGAN CHASE & CO.

When E-mail Isn't Enough

ALL LARGE ORGANIZATIONS need more than just e-mail these days, say industry analysts. But there are some activities that require collaborative technologies more than others. Collaborative Strategies consultant David Coleman has identified six types of activities that are ripe for collaboration tools:

- Creating sales proposals or responding to a request for proposals.
- Exception handling in customer service, when resolving a customer problem may require the involvement of several employees or departments.
- Research and development.
- Education and training.
- Crisis management.
- Managing outside partners, when a company has multiple relationships with external partners that must be managed and documented.

Obstacles to Adoption

A RELUCTANT EMPLOYEE population can foil even the best-planned collaborative implementations.

Managers may shun collaborative products because they don't see how they might improve their departments' efficiency. Consultant David Coleman at Collaborative Strategies recalls speaking to a sales manager who was worried about his staff's decreasing ability to win contracts. The company had recently expanded, and it was difficult to get the right people together to draft a quality proposal on deadline. "To him, it was a sales management problem. But it was really a collaborative problem," says Coleman. "A virtual team room would really solve his problem."

Another obstacle is employee resistance to change. When Dow Corning implemented Documentum's eRoom, which features document repositories and discussion forums, it was a big change from the usual methods of sharing documents – via e-mail, FTP sites or FedEx. So far, few employees have joined.

"About 4% are using eRoom, whereas 70% could make use of it," says Ann Marie Horcher, an enterprise application engineer at Dow.

According to David Via, an analyst at Ferris Research, a research firm that covers the collaborative software market, that attitude is common. "People get frustrated with the usability, and they're back to e-mail," he says.

Horcher thinks Dow employees would like eRoom if they'd just give it a chance. To tempt them, Dow plans to embed a link to eRoom in the company e-mail client.

"My feeling is that once we put it on the menu [of Outlook], we will see a lot more interest," Horcher says.

– SUE HILDRETH

frequent-flier miles visiting customers.

"If they want to make a customer presentation, they start the Web conference at their desk, turn on recording, do the presentation and put it on the Web site," says John Griffith, Pemco's director of IT, noting that they can also opt to do a live webcast.

Likewise, Dow Corning Corp. in Midland, Mich., has noticeably reduced employee travel through the use of both Documentum Inc.'s eRoom for document collaboration and WebEx Communications Inc.'s webcasting services for online meetings and seminars.

WebEx has substantially decreased the need to travel for marketing presentations, technical support and partner training, notes Ben Martinson, enterprise application engineer at Dow Corning. "It's used to troubleshoot problems by utilizing the desktop and application-sharing functionalities," he explains. "And some internal business [units] have moved to WebEx to host distributor training."

Paperwork overload. The Babcock & Wilcox Co. (B&W), a $1.4 billion manufacturer of power-generation equipment, had a document management problem. Each order for a new piece of equipment inevitably created a flood of documents — contracts, product specifications, purchase orders, product designs and documentation. Most of these were sent via FedEx or uploaded to one of the thousand or so FTP sites created by B&W employees. Keeping track of the location or current version number of any particular document had become extremely difficult.

"If I sent a drawing out to somebody, I had absolutely no idea what they'd do with it," says Penny Sherrod, B&W's director of enterprise systems. She also notes that the company incurred significant costs by express-mailing documents back and forth.

So a couple of years ago, B&W began moving its documents online. The IT staff first deployed a MatrixOne Inc. document management application and then integrated that with BEA Systems Inc.'s AquaLogic (formerly from Plumtree Software Inc.). AquaLogic provides additional features, such as the ability to integrate multiple back-end applications and, on a more basic level, a place to post company news.

When the implementation is complete, in early 2006, both suppliers and customers will be able to access product documents as well as check the status of purchase orders and requests for quotations.

Training without travel. When employees need to take a class to earn a degree, obtain certification or just hone their skills, they often must travel to a classroom. But the advent of virtual classrooms promises to make professional development a great deal easier.

It's making learning easier and more enriching for students and staff in the Nechako Lakes Schools District, which is located in a rural part of British Columbia. Thanks to computer-based learning, students can take classes offered only at other schools in the district.

The program has expanded from 13 to 1,200 students, who take part in discussion forums, webcasts, live chats and breakout sessions using the Lotus Domino Virtual Classroom. Instructors also use the Lotus Learning Management System to handle class scheduling, course creation, enrollment and other tasks.

Ernie Mannering, director of information services and technology for the district, says the virtual classroom provides opportunities for students to interact with a larger group of students, as well as absorb lessons better. "It gives students more time to compose their thoughts," he says.

Of course, the biggest benefit is being able to take a class via a computer rather then driving miles to a physical classroom — a benefit that business professionals can appreciate as well.

> Once you know what the word *collaboration* means to you from a process perspective, then you can start looking at your budget and what technology is out there.
>
> **MICHAEL BROWN**, SENIOR PROJECT MANAGER, J.P. MORGAN CHASE & CO.

Once you have a basic idea of what type of software you need — webcasting for meetings or document management for paper-intensive projects — the next step is to evaluate the technical requirements of the products.

Integration is one issue to consider; many collaboration products have to interoperate with others, such as a document management package and a portal, or IM and e-mail.

"One example is your typical groupware application, which has calendaring and scheduling, a company directory and things like that. Those bits and pieces need to be pretty tightly integrated," observes IDC's Mahowald.

Then comes maintenance. Applications that bundle multiple collaborative features may be easier to maintain than a collection of technologies from different vendors.

"Because they integrate so well together, maintenance is easier. I didn't have to add anyone to support Oracle Content Services," says Pemco's Griffith. "I've got the same group of people doing e-mail, calendar, Oracle Content Services, instant messaging, voice mail, Web conferencing and fax."

Hardware, of course, is another issue. Will the application require its own server, or conversely, does it need to share space with your database? If you opt for webcasting, can your network handle the bandwidth demands?

How about security? At the CDC, IT staffers had to ensure that any application would work with the extranet security framework already in place.

And don't forget scalability. Your collaboration tool may start as a departmental application, but someday you may want to expand it to the entire company. Can it scale?

The choice really depends on three basic factors, says Brown at J.P. Morgan Chase. "It comes down to how dispersed your team is, what type of collaboration you need to do — like do you need to collaborate on documents or just share access to them — and your budget," he says. "Once you know what the word *collaboration* means to you from a process perspective, then you can start looking at your budget and what technology is out there."

Hildreth is a freelance technology writer in Waltham, Mass. She can be reached at Sue.Hildreth@comcast.net.

When E-mail Isn't Enough

ALL LARGE [illegible] need more than just e-mail these days, say industry analysts. But there are some activities that require collaborative technologies more than others. Collaborative Strategies consultant David Coleman has identified six types of activities that are ripe for collaboration tools:

- Creating sales proposals or responding to a request for proposals.
- Exception handling in customer service, when resolving a customer problem may require the involvement of several employees or departments.
- Research and development.
- Education and training.
- Crisis management.
- Managing outside partners, when a company has multiple relationships with external partners that must be managed and documented.

Obstacles to Adoption

[illegible]

— SUE HILDRETH

Deep Web

DEFINITION

The **deep Web**, also called the invisible Web, refers to the mass of information that can be accessed via the World Wide Web but can't be indexed by traditional search engines — often because it's locked up in databases and served up as dynamic pages in response to specific queries or searches.

BY RUSSELL KAY

Most writers these days do a significant part of their research using the World Wide Web, with the help of powerful search engines such as Google and Yahoo. There is so much information available that one could be forgiven for thinking that "everything" is accessible this way, but nothing could be further from the truth. For example, as of August 2005, Google claimed to have indexed 8.2 billion Web pages and 2.1 billion images. That sounds impressive, but it's just the tip of the iceberg. Behold the deep Web.

According to Mike Bergman, chief technology officer at BrightPlanet Corp. in Sioux Falls, S.D., more than 500 times as much information as traditional search engines "know about" is available in the deep Web. This massive store of information is locked up inside databases from which Web pages are generated in response to specific queries. Although these dynamic pages have a unique URL address with which they can be retrieved again, they are not persistent or stored as static pages, nor are there links to them from other pages.

The deep Web also includes sites that require registration or otherwise restrict access to their pages, prohibiting search engines from browsing them and creating cached copies.

Let's recap how conventional search engines create their databases. Programs called spiders or Web crawlers start by reading pages from a starting list of Web sites. These spiders first read each page on a site, index all their content and add the words they find to the search engine's growing database. When a spider finds a hyperlink to another page, it adds that new link to the list of pages to be indexed. In time, the program reaches all linked pages, presuming that the search engine doesn't run out of time or storage space. These linked pages, reachable from other Web pages or sites, constitute what most of us use and refer to as the Internet or the Web. In fact, we have only scratched the surface, which is why this realm of information is often called the surface Web.

QUICK STUDY

Why don't our search engines find the deeper information? For starters, let's consider a typical data store that an individual or enterprise has collected, containing books, texts, articles, images, laboratory results and various other kinds of data in diverse formats. Typically we access such database-based information by means of a query or search — we type in the subject or keyword we're looking for, the database retrieves the appropriate content, and we are shown a page of results to our query.

If we can do this easily, why can't a search engine? We assume that the search engine can reach the query input (or search) page, and it will capture the text on that page and in any pages that may have static hyperlinks to it. But unlike the typical human user, the spider can't know what words it should type into the query field. Clearly, it can't type in every word it knows about, and it doesn't know what's relevant to that particular site or database. If there's no easy way to query, the underlying data remains invisible to the search engine. Indeed, any pages that are not eventually connected by links from pages in a spider's initial list will be invisible and thus are not part of the surface Web as that spider defines it.

How Deep? How Big?

According to a 2001 BrightPlanet study, the deep Web is very big indeed: The company found that the 60 largest deep Web sources contained 84 billion pages of content with about 750 TB of information. These 60 sources constituted a resource 40 times larger than the surface Web. Today, BrightPlanet reckons the deep Web totals 7500 TB, with more than 250,000 sites and 500 billion individual documents. And that's just for Web sites in English or European character sets. (For comparison, remember that Google, the largest crawler-based search engine, now indexes some 8 billion pages.) Bergman's company, a vendor of deep Web harvesting software that works mainly with the intelligence community, accesses sites in over 140 languages, many based on non-Latin characters. BrightPlanet routinely ships its products with links to over 70,000 deep Web sources, all translated into English. Bergman says that his customers are probably accessing two to three times that many sources.

The deep Web is getting deeper and bigger all the time. Two factors seem to account for this. First, newer data sources (especially those not in English) tend to be of the dynamic-query/searchable type, which are generally more useful than static pages. Second, governments at all levels around the world have made commitments to making their official documents and records available on the Web. Bergman says he's aware of at least 10 U.S. states that maintain single-access portals to all state documents and public records.

Interestingly, deep Web sites appear to receive 50% more monthly traffic than surface sites do, and they have more sites linked to them, even though they are not really known to the public. They are typically narrower in scope but likely to have deeper, more detailed content. According to Bergman, only about 5% of the deep Web requires fees or subscriptions. ▸

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Diving Into the Deep Web

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Information that is new and dynamically changing, such as news or stock and bond prices, will appear on the deep Web.

Web sites of searchable databases can be retrieved via directories and search engines. This may be thought of as "split-level searching." For the first level, search for the database site. For the second level, go to the site and search the database itself for the information you want.

Many search engine sites and commercial portals feature searchable databases as part of their package of services.

Some search engines will search the deep Web for related content subsequent to an initial search.

The results of a query on any topic in the deep Web can be extremely varied. This makes it impossible to anticipate what might turn up in a database. In addition, this coverage will be fluid as databases proliferate on the Web.

Some of the information stored on Web-accessible databases may not be substantive or useful to most searchers. As with all Web searching, it is important to tailor the query to the tool.

SOURCE: UNIVERSITY LIBRARIES, UNIVERSITY AT ALBANY, STATE UNIVERSITY OF NEW YORK

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SOURCE: UNIVERSITY LIBRARIES, UNIVERSITY AT ALBANY, STATE UNIVERSITY OF NEW YORK

Geek's

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Web-based Database Of Mouse Brain Should Aid Research

RESEARCHERS AT the U.S. Department of Energy's Brookhaven National Laboratory in Upton, N.Y., have launched a Web-based 3-D digital atlas and database of the brain of a popular type of laboratory mouse.

"Neuroscientists around the world can now download these extremely accurate anatomical templates and use them to map other data, such as which parts of the brain are metabolically active and where particular genes are expressed," said project leader Helene Benveniste, a researcher in Brookhaven's medical department and a professor of anesthesiology at Stony Brook University.

The database was created using high-resolution magnetic resonance microscopy at the University of Florida in collaboration with researchers from Brookhaven's Center for Translational Neuroimaging. The work was done in parallel with the Mouse Phenome Database project, which aims to establish a collection of baseline phenotypic data from commonly used inbred mice.

3-D digital rendering of the adult C57BL/6J mouse brain

The new brain-atlas database consists of 3-D anatomical data from 10 adult male mice of the strain C57BL/6J. It contains data on 20 segmented structures and downloadable visualization tools.

GROVES OF ACADEME

Robo-patients Let Students Practice Medicine

ROBOTIC SIMULATED PATIENTS are allowing students in the Michael G. DeGroote School of Medicine to practice clinical skills before they treat human patients.

A simulator lab training center set up by the anesthesia department allows students to experience the challenges of working in a hospital operating room in a setting that looks and functions as closely as possible to the real thing. The new training lab at the McMaster University Health Sciences Centre in Hamilton, Ontario, features computer-operated medical equipment hooked up to what appears to be a real patient on an operating room table. In fact, the patient is a $100,000 computerized, humanlike robot that mimics bodily functions such as respiration and heartbeat, as well as swelling and other changes that an actual patient might experience.

BOB TAYLOCK

Teachers at McMaster University demonstrate the computerized mannequin patient.

Medical students learn how to administer anesthesia and monitor the patient and medical equipment. From a control room in the lab, instructors watch the students and manipulate the mannequin's responses to mimic what might occur in a real-life situation. For example, they could change the mannequin's heart rate or breathing or make its throat or tongue swell, requiring the students to think on their feet and make the necessary adjustments.

The use of simulation technology at McMaster will expand significantly in coming months, because its School of Nursing will be using government funding to establish another simulation lab, complete with a family of robo-patients.

The lab will have anatomically correct, computerized mannequins that can speak and simulate different medical conditions, providing nursing students with a virtual hospital experience in which they can practice assessment and treatment and apply their problem-solving skills. It will be used by students of the joint McMaster-Mohawk-Conestoga nursing program and will eventually expand to offer training for students in a variety of health care training programs.

Norm Buckley, chairman of McMaster's anesthesia department, said the anesthesia simulation lab ensures that students receive the most advanced training possible.

"The students are more confident and skilled," Buckley said. "They understand more of what the clinical instructors are showing them, and they are able to assimilate more of what they are seeing and doing."

Catherine Tompkins, associate dean of McMaster's School of Nursing, said, "Simulation technology represents the wave of the future and will provide our students with the state-of-the-art tools necessary to further their training and prepare them as the leaders in our future health care environment."

Page compiled by Tommy Peterson.

Geek's Garden

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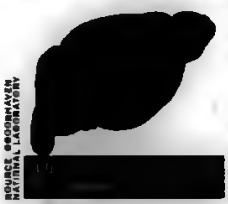
SOURCE: BROOKHAVEN NATIONAL LABORATORY

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DIFFERENCE ENGINES

Page compiled by Tommy Peterson.

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Sun microsystems

A C++ Reading List

These books offer advice about topics such as writing more-efficient C++ code and making that code more secure. By Todd R. Weiss

The C++ development language has been used for years, but some of its best secrets are still buried, waiting to be discovered and implemented. These four books offer varying approaches to C++, from a beginner's guidebook to more advanced books that teach developers how to better exploit the power, flexibility and security that lurks beneath the surface of C++.

■ **Secure Coding in C and C++,** *by Robert C. Seacord, Addison-Wesley, 2006, $39.99, 341 pages.*

This guide to writing more-secure code focuses on preventing fundamental programming errors that can lead to the most common and dangerous security vulnerabilities in C and C++ code. The book is filled with real-world examples, including detailed steps for preventing the buffer overflows and hacker attacks that are possible through the incorrect use of dynamic memory management functions. It also features sections on notable security vulnerabilities and their mitigation strategies, as well as information on practices that could help you improve your code writing.

■ **Beyond the C++ Standard Library: An Introduction to Boost,** *by Bjorn Karlsson, Addison-Wesley, 2005, $49.99, 388 pages.*

This guide to the 58 Boost libraries that have been created to extend development capabilities for C++ developers provides extremely detailed descriptions about the 12 Boost libraries that are most useful. The book covers a wide range of subjects, including numeric libraries, smart pointers, a preprocessor library and more. The sections on each of the featured libraries include details on how the libraries can be used to improve code and how to avoid common problems. While the book glosses over the other 46 Boost libraries with little more than brief descriptions, it breaks down the 12 most important ones into their essential elements to help you take advantage of the power of Boost.

■ **Effective C++ Third Edition: 55 Specific Ways to Improve Your Programs and Designs,** *by Scott Meyers, Addison-Wesley, 2005, $44.99, 297 pages.* This C++ guide offers insights into using C++ code effectively to create efficient, portable and maintainable code for your software development projects. It includes 55 ultradetailed suggestions for established developers for improving programs written in C++ — it's not a guide to getting started from the ground up in the language. Included are clear descriptions as well as examples and points to remember as you produce your code. Chapter topics include help with designs and declarations, inheritance and object-oriented design, generic programming, and implementations and templates.

■ **C++ Without Fear,** *by Brian Overland, Prentice Hall, 2004, $24.99, 486 pages.* This helpful guide starts with the basics, like programming how-to's and writing your first C++ programs, and it's filled with clear illustrations and step-by-step examples. It's a good book for beginners or nondevelopers who may want to know more about what's under the hood of software, but it could also help IT veterans who want to relearn some of the basics. The book is presented in an easy-to-navigate format that allows the reader to quickly find topics of interest. ▶

Corporate data centers account for more than 50% of the average company's power costs.

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6	2
24x MORE COMPUTE THREADS PER RACK	
960	40
¼ THE SIZE	
1U	4U
⅕ THE POWER CONSUMPTION	
300 Watts	1,470 Watts
THE RIGHT ARCHITECTURE FOR YOUR WEB AND APPLICATION WORKLOADS	
ULTRASPARC	Xeon
⅓ THE PRICE	
$3,625	$11,575

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Rising to a Higher Standard Isn't Easy

Our manager sees the need to implement two best practices: separation of duties, and the principle of least privilege. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

SOME EMPLOYEES are held to a higher standard of behavior than most. Anyone in a position with broad powers or influence falls into this group, including accountants, managers, systems administrators — and information security professionals.

Like systems administrators, information security professionals generally have access to a great deal of data and information. Even if they don't have direct access, they generally know how to obtain it by exploiting a weakness (like hackers, but with the opposite intent) or by simply giving themselves elevated privileges.

In our small shop, the systems administrators, help desk workers and security people all have a great deal of access. This past week, some issues arose that caused me to go back to some best practices regarding access. One is called separation of duties, and the other is called the principle of least privilege.

Raising the Bar

It all started when a co-worker told me he suspected that one of my staffers was snooping around on employee computers. Over the past year, I had heard similar complaints from various managers, but the staffers who had been the cause of those earlier concerns are no longer employed here, and I thought that it was a dead issue.

However, I had failed to change processes so that such an issue couldn't arise again, and if you set low standards, some people who don't personally have high standards will drop down to the lowest common denominator. It was time to raise the standards and change some processes so that the potential for abuse would be minimized.

While much attention in the world of information security is given to technology, the most overlooked security risk is the level of access that systems and security people have on the network.

In the IT world, you have to have gurus running around who can not only fix a network problem, but also troubleshoot issues that crop up with operating systems, databases or the application layer. The gurus have godlike status on the network, and that status demands integrity on their part. You have to be able to trust the people you open your network to. Once trust is lost, it's game over.

An audit trail is one way of finding out when trust is lost. There should also be an acceptable-use policy for systems administrators that's published and enforced. Violations of the policy should be punishable by termination.

With a small team, addressing separation of duties is a challenge. The purpose of separation of duties is to make sure that no single person can control a transaction or process from beginning to end. That's a beautiful thing in the banking world. It's not so hot in the IT world, where it's very difficult to achieve pure separation of duties.

Ideally, you want to make sure that the person who troubleshoots the desktop systems doesn't have the same privileges as the person who manages the servers, the switches, the routers or the firewalls. In most cases, it isn't feasible unless you have a very large staff among whom you can divvy up the myriad duties.

Taking Action

Turning to separation of duties, I first addressed our use of the administrator account. Before, staffers had permission to log into a server or to remotely administer a desktop using the administrator log-in.

Now, each person must use his own account with administrative privileges. This doesn't change the level of privileges held by each staffer, but it does create an audit trail that specifically names the person who owns the account used, rather than providing a generic log-in name.

Second, the senior systems administrator reset the administrator password, wrote it down, locked it up and gave a key to only one other person. On pain of termination, the password is not to be given out. Of course, this could be a problem if any system accounts were running under the administrator account, since each of those accounts would have to have its password reset as well. It's a poor practice to bring up operating system services under an administrator account, but it happens all the time. A better practice is to always create special system accounts with appropriate permissions for particular applications and services.

Next, I told my staffers that they need permission from the end user prior to making a remote connection to a desktop system. In fact, the end user must call the help desk and specifically request assistance. After the user's request is made, the sysadmin must say to the end user something like, "I'd like to log into your desktop remotely to see if I can troubleshoot the problem for you. Is now a good time?" The exchange between administrator and end user must be documented in the help desk ticket. While this may not be a foolproof method for ensuring that administrators don't abuse their privileges, it carries a message to them and creates an audit trail.

The second best practice I set out to address is the principle of least privilege. Administrators should have the least amount of privilege possible to get the job done. The log-in and password to the firewall should not be the same as those for the routers, the switches, any of the servers, the database, and on and on.

I once performed a security assessment for a large company that had acquired a smaller one. My job was to assess the security of the acquisition before the network connections were made. The network manager's easily crackable log-in/password combination was the one and only log-in/password to everything in the enterprise, including the firewall.

In my current job, things aren't that bad, but we're working to make sure they're as good as possible.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum, **computerworld.com/forums**.

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SECURITY LOG

Pointsec Improves Integration Abilities

Encryption vendor Pointsec Mobile Technologies Inc. in Malmo, Ill., released a new version of its Pointsec for PC software for mobile devices that is designed to better integrate with authentication technologies such as smart cards. Pointsec for PC 6.0 uses a new authentication engine that the company said is designed to work with virtually any smart card or token that is on the market today.

Fed Cybersecurity Efforts Faulted

The U.S. government has made little progress in most cybersecurity areas in the past year, despite warnings from several groups, said a trade group representing cybersecurity vendors. The U.S. Department of Homeland Security has failed to hire an assistant secretary for cybersecurity even though an elevated position was announced in July, and cybersecurity research and development within the U.S. government is "at a crisis," said Paul Kurtz, executive director of the Cyber Security Industry Alliance.

3Com Wants to Hack Your Network

3Com Corp. in Marlboro, Mass., is introducing a service called Security Posture Assessment, where 3Com TippingPoint security experts try to break into customers' systems. In three days or more of on-site testing, the experts will run a variety of tools and assessment tasks, including network mapping, scanning and password cracking. They will then attempt to gain access to machines and assess the severity of system privileges on compromised servers.

Rising to a Higher Standard Isn't Easy

Our manager sees the need to implement two best practices: separation of duties, and the principle of least privilege. By C.J. Kelly

SECURITY MANAGER'S JOURNAL

SOME EMPLOYEES are held to a higher standard of behavior than most. Anyone in a position with broad powers or influence falls into this group, including accountants, managers, systems administrators — and information security professionals.

Like systems administrators, information security professionals generally have access to a great deal of data and information. Even if they don't have direct access, they generally know how to obtain it by exploiting a weakness (like hackers, but with the opposite intent) or by simply giving themselves elevated privileges.

In our small shop, the systems administrators, help desk workers and security people all have a great deal of access. This past week, some issues arose that caused me to go back to some best practices regarding access. One is called separation of duties, and the other is called the principle of least privilege.

Raising the Bar

It all started when a co-worker told me he suspected that one of my staffers was snooping around on employee computers. Over the past year, I had heard similar complaints from various managers, but the staffers who had been the cause of those earlier concerns are no longer employed here, and I thought that it was a dead issue.

However, I had failed to change processes so that such an issue couldn't arise again, and if you set low standards, some people who don't personally have high standards will drop down to the lowest common denominator. It was time to raise the standards and change some processes so that the potential for abuse would be minimized.

While much attention in the world of information security is given to technology, the most overlooked security risk is the level of access that systems and security people have on the network.

In the IT world, you have to have gurus running around who can not only fix a network problem, but also troubleshoot issues that crop up with operating systems, databases or the application layer. The gurus have godlike status on the network, and that status demands integrity on their part. You have to be able to trust the people you open your network to. Once trust is lost, it's game over.

An audit trail is one way of finding out when trust is lost. There should also be an acceptable-use policy for systems administrators that's published and enforced. Violations of the policy should be punishable by termination.

With a small team, addressing separation of duties is a challenge. The purpose of separation of duties is to make sure that no single person can control a transaction or process from beginning to end. That's a beautiful thing in the banking world. It's not so hot in the IT world, where it's very difficult to achieve pure separation of duties.

Ideally, you want to make sure that the person who troubleshoots the desktop systems doesn't have the same privileges as the person who manages the servers, the switches, the routers or the firewalls. In most cases, it isn't feasible unless you have a very large staff among whom you can divvy up the myriad duties.

Taking Action

Turning to separation of duties, I first addressed our use of the administrator account. Before, staffers had permission to log into a server or to remotely administer a desktop using the administrator log-in.

Now, each person must use his own account with administrative privileges. This doesn't change the level of privileges held by each staffer, but it does create an audit trail that specifically names the person who owns the account used, rather than providing a generic log-in name.

Second, the senior systems administrator reset the administrator password, wrote it down, locked it up and gave a key to only one other person. On pain of termination, the password is not to be given out. Of course, this could be a problem if any system accounts were running under the administrator account, since each of those accounts would have to have its password reset as well. It's a poor practice to bring up operating system services under an administrator account, but it happens all the time. A better practice is to always create special system accounts with appropriate permissions for particular applications and services.

Next, I told my staffers that they need permission from the end user prior to making a remote connection to a desktop system. In fact, the end user must call the help desk and specifically request assistance. After the user's request is made, the sysadmin must say to the end user something like, "I'd like to log into your desktop remotely to see if I can troubleshoot the problem for you. Is now a good time?" The exchange between administrator and end user must be documented in the help desk ticket. While this may not be a foolproof method for ensuring that administrators don't abuse their privileges, it carries a message to them and creates an audit trail.

The second best practice I set out to address is the principle of least privilege. Administrators should have the least amount of privilege possible to get the job done. The log-in and password to the firewall should not be the same as those for the routers, the switches, any of the servers, the database, and on and on.

I once performed a security assessment for a large company that had acquired a smaller one. My job was to assess the security of the acquisition before the network connections were made. The network manager's easily crackable log-in/password combination was the one and only log-in/password to everything in the enterprise, including the firewall.

In my current job, things aren't that bad, but we're working to make sure they're as good as possible.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: computerworld.com/forums

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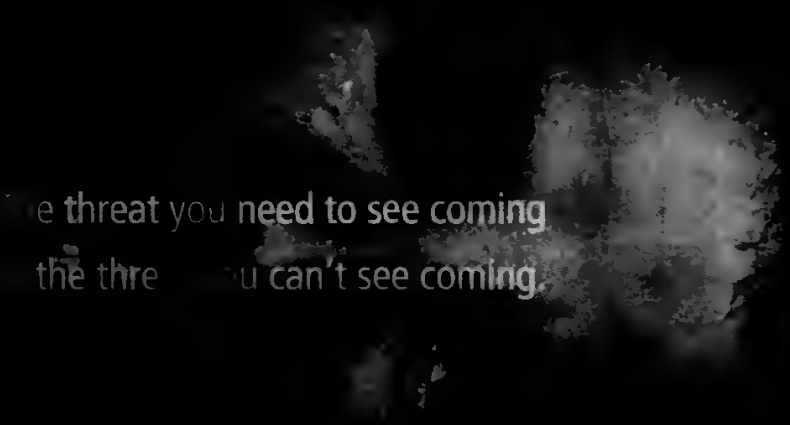
SECURITY LOG


e threat you need to see coming
the thre u can't see coming.

BRIEFS

ID Management Application Updated

■ Beta Systems Software AG has unveiled Version 4 of its SAM Jupiter enterprise identity management application. According to the Berlin-based vendor, the new version is easier to customize than previous ones, and it can run on Unix or Windows systems in addition to mainframe platforms such as z/OS. It also features a pure Java business server infrastructure and an extended graphical user interface for managing system utilities. Available now, SAM Jupiter is priced at about $110,000 for a 3,000-user installation.

Sun Eyes Health Care ID Integration

■ Sun Microsystems Inc. has announced the availability of iProvider Global Identifier, an application-based services offering designed to support more-efficient management of information about health care providers. Based on Sun's Java Integration Suite, iProvider Global Identifier is intended to make it possible to integrate multiple provider ID numbers stored in various formats across disparate health care systems and then match them to a common industry-standard format known as the National Provider Index.

Content Delivery Software Upgraded

■ Stratacache Inc. has introduced Version 3.0 of its OmniCast content distribution software, which is designed to distribute data, software and video files to hundreds of thousands of locations simultaneously. New features include TCP support for public or private networks and the ability to handle files of up to 1TB. The latest version also allows users to include Windows file-system security controls in the files they distribute. OmniCast 3.0 starts at $35,000 for the server software plus $1,000 per remote site. It will be available on Jan. 16, according to the Dayton, Ohio-based vendor.

CURT A. MONASH

The Diskless PC Revolution

PERSONAL computers have changed dramatically over the past two decades, but one element has remained constant: processing power, device connectivity and fixed storage have all been combined in one central engine.

Whether you're using a handheld, laptop or desktop device, the data and software reside in the system itself, or they live on a server somewhere else in the network cloud, but they're all in the same place.

CURT A. MONASH is a consultant in Acton, Mass. You can reach him at curtmonash@monash.com.

But that constant may change. Thanks to flash memory, it may soon be practical to have all of your data, plus most of your software, sitting conveniently in your pocket. When that happens, consumer and business computing alike could change significantly.

Here's how the basic hardware setup could develop: Instead of relying on fixed disks, PCs would have ports for two to four or more flash drives. One or two would hold the operating system and most of the programs. The others would be focused mainly or entirely on data. And these flash drives would be portable from system to system, although there might be a partial exception for small devices such as cell phones, cameras, personal organizers or music players. But even if they kept a little onboard storage, it could be loaded from and backed up to a flash drive fitting into at least one port.

This concept has one huge difference from most other diskless PC plans: Rather than all living on a big server in the cloud, your personal data (and software) would never leave your custody. Thus, issues of network reliability, service provider lock-in, service-provider privacy safeguards and so on would all be mitigated. What's more, migration is almost a nonissue; older fixed-disk computers with USB ports fit into that diskless world perfectly well.

I love the hardware implications of this idea. First of all — continuing the theme of last month's column ("Managing Data at RAM Speed," Nov. 14) — every PC would benefit from huge improvements in memory-access speed. Beyond that, banishing the disk would slash laptop power requirements, and that means a huge overall weight reduction. And like other ideas about diskless PCs, this one would make it more affordable to optimize monitors, signal processors and the like for particular kinds of applications and room environments.

One loser from this change could be Microsoft. The price per gigabyte would increase, so bloatware would be harder to tolerate. Restrictive licensing practices might not fit well, either. But otherwise, software would benefit. In particular, voice recognition could become more practical, because you could port the training you've done of the system from device to device. The same goes for handwriting recognition and other customizations.

In particular, improving "disk" speed on PCs by multiple orders of magnitude could have all sorts of favorable consequences. Object file systems and full-PC search could be much more usable. Autosave would work better, and PCs wouldn't freeze as frequently as a result of browser cache thrashing. And as far as security permissions are concerned, anybody from number crunchers to engineering professionals could work efficiently on huge, personalized data sets.

Ah, yes — security. Without the disk-access bottleneck, it would become reasonable to encrypt or decrypt a PC's entire database each time you logged off or on. No more security breaches from stolen laptops — or, rather, from picked pockets and busted lockboxes, since it would no longer be a good practice to store the data with a thief-attracting laptop at all.

In another security-related area, two-factor authentication would also be easier, since the flash drive itself becomes the "thing you have," rather than a smart card or an RSA-style clicker device.

Meanwhile, one objection that's been raised to this idea is, in my opinion, somewhat bogus. Yes, badly protected diskless machines aren't really secure; at least theoretically, they're vulnerable to "man in the middle" attacks. And perhaps that's an argument for continued use of laptops and against the idea of terminals in every hotel room — although if you fear that kind of attack, why not fear spy cameras and audio bugs as well? But in any case, it's not a persuasive argument against corporate or home deployments. If your janitors can't be trusted, traditional PCs are at least as vulnerable as diskless ones.

Diskless PCs are too futuristic to figure into most current IT plans, although they do provide another reason to move away from Microsoft desktops (indeed, their support for dual booting will eventually smooth such a transition). But it's interesting to think about them now. If you want to pursue the subject further, you can find more thoughts and links on the subject on my Web site at *www.monashreport.com.*

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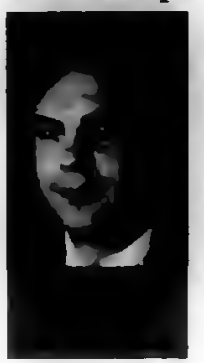

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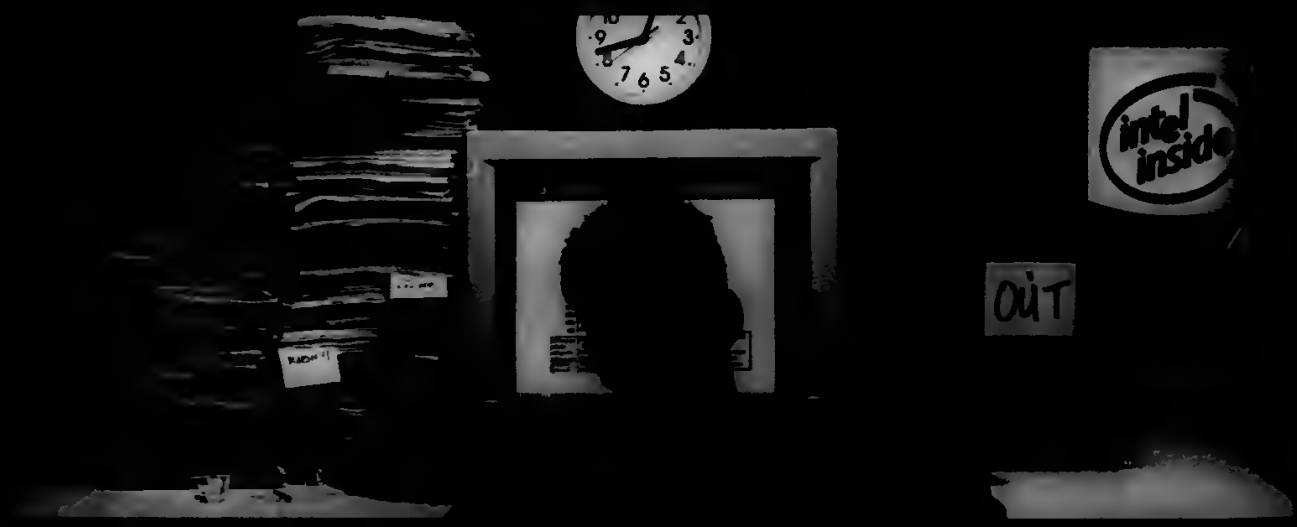

Are you working with old systems?

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No Fun
Some CIOs say that the IT group that plays together stays together — and achieves better results along the way. Here's how to inject some levity into your workplace for fun and profit. **PAGE 44**

How to Write a Progress Report
Progress reports are essential tools for tracking IT initiatives, but if the writers and readers aren't in sync, such reports can be hit-or-miss exercises for all involved. IT leaders on the receiving end talk about what makes for a great read. **PAGE 45**

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It's Time to Invest in Leadership
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To understand their customers better, some IT professionals are delving into the nitty-gritty of business life.

By Kathy Chin Leong

HANDS ON

WHEN JOHN BARBANO assumed the position of CIO at Johnson & Johnson Network Computer Services, he did all he could to learn about the $47.3 billion parent company, Johnson & Johnson, which develops pharmaceuticals, medical devices and consumer products. Since Barbano's previous CIO experience was in financial services at Merrill Lynch & Co., he immediately began studying the inner workings of the New Brunswick, N.J., conglomerate and its product lines. Approximately 15 months later, in February 2004, he moved up the management ranks to vice president and CIO for J&J's largest business segment, pharmaceutical research and development. (The pharmaceutical arm stretches across six R&D companies worldwide.) Once in that role, he initiated a deeper educational process.

"My own learning was accelerated through special projects, spending time with scientists and clinicians, seeing how they do drug discovery and development, listening to their challenges," he says. "I also make a point to keep up with the industry by reading books, attending select conferences and reading white papers about vendor solutions."

Barbano represents the new wave of IT professionals who initiate hands-on experiences to understand the nuts and bolts of what it takes to create a product or serve a customer. By immersing themselves in business, they boost company success while building the trust and credibility that leads to career success.

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As they think outside the computer box, they become specialists in marketing, R&D, sales and other company functions. "Businesses are turning to the IT departments and saying, 'We need new ways of reaching customers

and want to build products in a more efficient way,' " says Mark Gilfand, incoming president of the Association of Information Technology Professionals in Chicago.

As companies reorganize and merge, corporations are purposely strengthening the ties between IT and core business, and the changes provide an opportunity for IT executives to reshape departments and retrain staffs.

Hence, IT departments are no longer order takers. "We can come to scientists and end users with solutions, whereas before, they used to tell us what they thought the solution should be," Barbano says. "We can say, 'Here's what we think we should be delivering in terms of technology-driven business solutions.' "

A Scientific Bent

Centocor Research and Development Inc. in Horsham, Pa., is a J&J pharmaceutical company that creates medicines to reduce symptoms of autoimmune diseases such as rheumatoid arthritis. It's not uncommon for the IT staff to work in close proximity to scientists and their laboratories. And technology staffers often come through the IT door with science backgrounds that come in handy when they are put to work on biochemistry projects.

Eric Perakslis, CIO at Centocor R&D, was already interested in the scientific component of the industry when he took the job. Now he's completing a Ph.D. in biochemical engineering.

In all phases of drug development, IT's role has become increasingly crucial. IT staffers working on data warehousing collaborate with drug discovery scientists to gain access to structured and unstructured databases in the most efficient way possible, says Barbano. "These scientists are more productive now," he says, "and we, together in partnership, are able to deliver significant value."

As the competition gets stiffer in a global market, the IT division must share the company's vision and understand how it fits into that vision.

That relationship isn't always as clear as it needs to be, as Gil Urban discovered at Whirlpool Corp. Urban is the assistant CIO responsible for staff development and internal IT operations at the $13 billion maker of home appliances in Benton Harbor, Mich.

"We got feedback that the IT staff was not all that clear what our mission was to the rest of the company," he says. So this year, his team in Whirlpool's Global Information Systems (GIS) unit created a DVD to state the goals of the 400-to-600-employee IT organization.

Then GIS launched a series of workshops worldwide, showing IT employees the DVD and discussing how their roles helped fulfill Whirlpool's goals. "We wanted to help our organization see what our purpose is, and also we wanted to engage them in the discussion and grow our people and their capabilities through this," Urban says.

"We [in GIS] want to create new business capabilities for Whirlpool, but we have to be clearly connected to the business to get the right pulse," he says. "We have to see the company both regionally and globally. Now we have a framework."

Unlike five years ago, when IT managers sat together at Whirlpool headquarters, today they are dispersed among the major business units. They participate in senior business meetings, review plans and strategize with business leaders. As management discusses new product plans for the Whirlpool line, shipping and delivery needs, and quality control, IT executives' voices are heard, Urban says.

Marriott International Inc. also recently produced an IT-related DVD. Called "Technology: Shaping and Enabling Our Business," its purpose is to educate hotel franchisees and business partners worldwide about the Washington-based company's technology initiatives and direction. It's also being shown to Marriott's 1,350 technology associates to emphasize how the department fits into the rest of the organization.

Into the Field

Top managers at Marriott and Whirlpool believe that their staffers will better understand the breadth and depth of the organization by going into the field with the business people. New IT managers in Marriott's Information Resources (IR) Field Services organization must work in one of the company's hotels for a week. They shadow people in various business functions such as sales, the front desk, engineering, food services and housekeeping.

"New associates get a real taste of what it's like to have to work and manage these different areas, and it helps them understand how technology makes the functions more cost-effective and efficient," says Wendell Fox, senior vice president of North American IR Field Services.

At Whirlpool, every IT person is encouraged to tour manufacturing facilities or ride in a service truck — not just once but on a recurring basis. "Everyone needs to be understanding the needs of our customers," says Urban.

Urban recently demonstrated the importance of this kind of immersion when he sat in on a telephone service call at one of the call centers.

"I was listening to the customer experience, and it seemed that there was a lot of wait time," he says. "I went to the IS group and told them our call center needed performance improvements. It's ad hoc experiences like these that give us a better handle on the way business is really being done."

Down to Brass Tacks

Sales and marketing staffers aren't the only ones concerned about competition at Whirlpool; the entire company gets involved in understanding the household appliance arena.

Once a month, the IT department holds town hall meetings to discuss the competition. And during bimonthly staff meetings, various IT groups go over corporate results, taking the time to cover financial concepts such as earnings per share. "So far, people have been really receptive to this," says Urban.

IT and business are connecting in the media world as well. John Eck is president and CIO at the new Media Works division at NBC Universal Inc. in New York. Charged with taking care of traditional IT services, Media Works is responsible for all the technology that occurs behind the lens, from audio and video to preproduction to postproduction film editing. Any type of media transmission, from satellite link to Internet services to HDTV technology, falls to Media Works. The division also handles anything to do with technical and networking infrastructure. With an international staff of 3,000 full-time employees, Eck estimates that the division is juggling at least 50 major technology projects.

Media Works IT employees are encouraged to be a part of the TV process. They can take time to explore how programs like the *Today* show or the *NBC Nightly News* is produced and edited. Once a month, the company hosts Media Works University, "where you can get closer to the writers and actors and see how a program is put together," Eck says. "You can see how *Saturday Night Live* is produced, and how our commercials, on-air promotions and programs are integrated."

When IT professionals understand the business, it's not just good for the company, it's also good for their careers. Gilfand, who is a staff assistant in systems at State Farm Insurance Co. in Bloomington, Ill., has earned three insurance certifications. "I did it to understand the business, and that raised my personal stock," he says. "That is key for IT professionals — to find ways to differentiate themselves." ◗

Leong is a freelance writer in Sunnyvale, Calif. Contact her at kchinleong@sbcglobal.net.

TRAINING

Tips for getting serious about business:

- Take advantage of reorganizations to tighten communication among IT, upper management and all departments.
- Encourage staffers to attend nontechnical industry conferences, and read books and periodicals related to the company's business.
- Review the company's core values; make sure IT knows where it fits into the strategic plans.
- Educate IT staffers in general business principles.
- Encourage IT staffers to visit business people in the field.
- Host informal meetings with people in other departments to talk about what they do and what they need from IT.
- Locate IT managers and staffers close to the departments they serve.
- Don't just take orders. Figure out where technology can help solve a business problem, or spearhead a new initiative.

– KATHY CHIN LEONG

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When did life in IT get so darn dreary, and what can you do about it?

BY MATT HAMBLEN

HAVE YOU heard the one about the CIO who made work so much fun that the IT staff actually wanted to show up every day?

Well, it's no joke. In fact, rising above the deadly seriousness that pervades many IT shops these days are several CIOs who are veteran fun-makers. They say their shenanigans have improved morale, retention and, by golly, even the IT services they offer and the businesses they serve.

If you think life in IT seems distinctly more serious than it was a decade ago, you're not alone. David Horth, a consultant at the Center for Creative Leadership in Greensboro, N.C., blames the lack of levity on the widely held perception that "being busy equals good work." But quite the opposite is true, he says.

Others blame it on the recession that dragged on too long or even the lingering pain of the Sept. 11, 2001, terrorist attacks. But Dale Sanders, a CIO devoted to bringing fun into the workplace, points to political correctness. "We seem to have washed ourselves clean of the value of diversity in culture and humor," says Sanders, who heads IT at Northwestern Medical Faculty Foundation Inc. to Chicago.

Sanders also cites the fear factor. "There's so much pressure in American culture to improve," he says. "That pressure causes fear, which excludes humor."

There's too much focus on the wrong things, he adds. "Of all the metrics we fret over in business these days, the most important is the laugh metric," Sanders says. "You can predict the outcome of a business by observing the number of times people laugh in the workplace. You can predict a successful business if you can hear heartfelt laughter 10 to 12 times a day."

Sanders says he has "an obligation as a leader to add some value to people's lives." One way to do that, he says, is through humor. "If people are laughing here at work, they will take it home to their husbands and wives," Sanders adds. "You can make life nightmarish for people — or meaningful."

Other IT leaders feel the same way, and they say their efforts have made a difference. John Wade, CIO at Saint Luke's Health System Inc. in Kansas City, Mo., suspects that his efforts to make work fun for the IT staff are responsible for holding the turnover rate among his staffers to about 3% over his lifetime as a manager.

And Michael Carper, divisional vice president of technology operations at retailer Coldwater Creek Inc. in Sandpoint, Idaho, says lightening up the workplace has "absolutely" made a difference. Part of that difference may be loyalty. Carper says that a handful of people who work for him now have moved with him from company to company. "They come from San Francisco, Seattle, Chicago, Indianapolis, Atlanta and other places to work on my team because this is a fun and rewarding team to work on," Carper says.

In an environment where there's fun, teamwork flourishes and workers recommend the company to their friends, aiding recruitment efforts, Carper says. Without fun, it's difficult to build the kind of cohesion often required in IT projects, and "you can bet your retention rate is in trouble and you won't be as successful in recruiting team-oriented employees with good customer service skills," he says.

David Foote, president of Foote Partners LLC in New Canaan, Conn., studies workplace issues and sees the value of humor. "A sense of humor will get you through just about anything," he says, "because it diffuses political situations, and everybody knows there's a lot of politics and angst when you're working in IT."

So, how do you build fun into an IT shop? "You can't suddenly say your group is starting today to have fun," Sanders says. "It has to be ingrained in the organization, or it won't work." That means that having a fun workplace starts at the top, he says. To give folks a chuckle, Sanders has posted photos on the intranet of staffers caught in awkward moments installing cables or servers, for instance. Sanders encourages others to add funny (and tasteful) captions.

At St. Luke's, few holidays go by without some kind of party. At one, Wade dressed in drag for a laugh. IT employees echo the levity; it's not unusual to see people wear cheese heads or feather headdresses to work. An air of humor pervades Wade's quarterly planning meetings. At one recently, a staffer joked about Wade's reputation for penny-pinching by presenting a mock-up of a $1 billion bill with Wade's face on it.

But it doesn't have to be about belly laughs. Carper makes it clear that his open-door policy allows people to come in and talk about sports, travel or their hobbies as well as work. And Wade encouraged a worker who wanted to form a "get healthy" group that takes walks together and has set up informal basketball games. The cost to the organization was minimal, he notes. "What does it cost to have some fun? Nothing," Wade says. "But what is the benefit? It's a happier workforce, which means less turnover, which benefits customers." ▶

Lighten Up

THE SHACKLES OF SERIOUSNESS won't break overnight, but infusing some fun into the workday can get things rolling and it can take on a life of its own. Here are some suggestions for lightening up from the keen dear among us.

LAUGH AT YOURSELF

Having a workplace that's fun starts with the manager in charge. "You have to have a sense of humor about yourself and laugh at yourself in the company of those you lead," says Dale Sanders, CIO at Northwestern Medical Faculty Foundation.

HIRE FOR HUMOR

Sanders asks job candidates to name their favorite comedian, comic strip or funny movie, and he asks himself if this is a person he'd like to sit next to on a coast-to-coast flight.

SMILE — OFTEN

To set the right tone in a workplace, "it's absolutely critical" that the person in charge "smiles more often than they frown," says Michael Carper, divisional vice president of technology operations at retailer Coldwater Creek.

ENCOURAGE "SERIOUS PLAY"

"Get workers to take an excursion, even for a moment, away from the serious work at hand," says David Horth, a consultant at the Center for Creative Leadership. Depending on the person, that might mean an hour of yoga at lunch or three minutes of playing a favorite instrument at the start of a meeting.

LOOK FOR OPPORTUNITIES

There are "a hundred ways to lighten up and have fun" every day, says John Wade, CIO of Saint Luke's Health System. "A party is always good."

ENCOURAGE SELF-EXPRESSION

Sanders encourages workers to "lightly personalize" their work spaces to warm up the environment.

REWARD FUN-MAKERS

Carper makes a point to recognize people who create workplace fun, and he ties the fun to improved productivity.

CHILL OUT

Start the day by chatting with colleagues instead of madly stressing over e-mails, Horth says. It might lead to more creative approaches to work.

– MATT HAMBLEN

How to write a Progress Report

IN ANY given month, Sue Schade sees 20 to 30 progress reports, and she needs to digest the information as quickly as possible.

Schade, CIO at Brigham and Women's Hospital in Boston, knows what she wants to see and how she wants to see it, and she makes her expectations crystal clear to those who report to her.

She expects to know what has been accomplished, which key decisions have been made, what's going on now, what's on the horizon and which issues are in play. She also wants to know whether projects are on track to meet their original deadlines. And she wants it all in a standard format.

"My folks know what they have to put in," Schade says. "I don't want to look at a lot of different formats and ask, 'Where's this? Where's that?' "

Progress reports are essential tools for tracking projects and initiatives, but if the writers and readers aren't in sync, reports can be hit-or-miss exercises for everyone involved.

Here are some tips on how to deliver the right information to the right people at the right time.

Set Expectations

Different people want different kinds of reports. One CIO might want a page of narrative, while another might want "a set of graphs and two bullet points," says Kevin Doyle.

"It depends on the situation, what the receiver is comfortable receiving and how you can best communicate with him," says Doyle, an associate professor of business administration at Benedictine University in Lisle, Ill.

Doyle, who has overseen corporate IT initiatives, says project managers should establish expectations at the start by determining who will get reports, how often and in what form.

Jason Fortier, director of the CRM service line at Adjoined Consulting Inc. in Miami, agrees. He's currently working with one company on a project that affects five business units, so he built a report template early on, shared it with division leaders and asked each whether he'd need anything else in the reports.

Fortier says a project's size, scope and phase help determine the frequency of reports. Projects in the analysis phase, for example, don't require weekly reports, but initiatives in the middle of implementation usually do, he says.

Nail Down the Essentials

It's up to you as project manager to find out what executives want in progress reports. When Rosalee Hermens reads a report, for example, she wants to see updates on the technology, finances, schedule, design and management, and she wants to compare those items over time. "I want to see those exact same things evaluated every week," says Hermens, principal at Hermens & Associates, an IT management consulting firm in Newton, Mass.

Former CIO Rick Swanborg, now a professor at the Boston University School of Management and president of Icex Inc., a Boston research and content management firm, says he wants to know what has been done and what needs to be done, how much time that will take, which issues remain and how they are being resolved. He also wants a qualitative assessment of the project.

> **"I don't want to look at a lot of different formats and ask, 'Where's this? Where's that?'"**
>
> SUE SCHADE, CIO, BRIGHAM AND WOMEN'S HOSPITAL, BOSTON

More-sophisticated reports will also include information about risks, including details on how the team is mitigating them and how the risks are changing, Swanborg says. For example, a hospital IT department installing tablet PCs might list insecure data as a risk early on. But as staff addresses that risk, another one — perhaps the possibility that a vendor could go out of business — may take its place.

Comprehensive reports may include information about the talent pool, too. "How am I going to make sure I retain my people in the project or get the resources I need when I need them?" Swanborg says. For example, the company may have 20 projects that need database managers at some point. If those managers get hung up on one project, it's important to determine how it will affect the schedule.

Similarly, some progress reports should include relevant information about other projects. The hospital tablet PC project, for instance, may depend on successful implementation of file management software. Project managers should include a line on how such ancillary initiatives are progressing and whether the schedules mesh.

Good status reports can highlight early-stage problems, required changes and areas that need improvement before any of those reach the crisis stage. "You're really looking at status reports [as a way] to improve your ability to deliver services," Swanborg says.

Keep It Simple

Many managers say that the best reports don't exceed one page and go light on narrative and heavy on graphics that clearly show progress and problems. Hermens looks for color-coded updates on key points. The colors — green, yellow and red — loosely correspond to "going fine," "needs attention" and "problematic."

Fine-tune to Your Audience

Good progress reports balance summaries and detailed analysis in a way that works best for the people receiving them. Andrew Galbus, an IT manager at a large Minnesota health care institution, suggests that you give the level of detail that most people would accept as enough but be prepared to answer questions that might arise.

And don't assume you know what your audience wants; ask them.

Know Your Media

Finally, check on the preferred method of delivery. Some managers may want updates via e-mail, others may be more comfortable with paper reports, and some may prefer a conversation. ▶

Pratt is a Computerworld contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.

How to write a Progress Report

Everyone does it, but few do it well. Here's how.

By Mary K. Pratt

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What to Leave Out

Even when higher-ups expect detailed reports, some items shouldn't make the final cut. Here are a few:

QUICK HITS

A View From The East

What is the outlook for your industry over the next 12 months?

NOTE: Percentages may not equal 100 because of rounding

BASE: 413 Asia-Pacific executives

How does your company's 2005 IT budget compare with actual expenditures in 2004?

	LOWER	HIGHER
Overall	[illegible]	[illegible]
India	[illegible]	[illegible]
ASEAN*	[illegible]	[illegible]
Australia/New Zealand	[illegible]	[illegible]
Japan	[illegible]	[illegible]
China	[illegible]	[illegible]
Taiwan	[illegible]	[illegible]
South Korea	[illegible]	[illegible]

*Association of Southeast Asian Nations

BASE: 389 executives at Asia-Pacific companies

Which of the following are likely to become major themes in the next 12 months?

Base: 700 IT decision-makers at Asia-Pacific companies; multiple responses allowed.

SOURCE: FOR ALL: THORNTON RESEARCH, INC., CAMBRIDGE, MASS., OCTOBER 2005

PAUL GLEN

It's Time to Invest In Leadership

IT'S definitely coming. I'm starting to hear the whispers, the talk. It reminds me of the days when we were discussing Y2k but not yet doing anything about it.

Do you remember? It started with a buzz around the water cooler. "You know that this thing won't work when we get to the year 2000. In the '60s, the programmers decided to save a few bytes by assuming the 19 at the start of the year field — no one thought that this stuff would be used for so long. We're not even sure that we have the source code. Someone's going to have to do something about that someday before it's too late."

Well, I'm starting to hear the same sort of buzz, although this time, it's not about the software, it's about the people.

"Have you noticed that most of our managers and executives are about the same age? They're all baby boomers, and they're going to start to retire in the next few years. We're not sure that we have the managerial bench strength to fill these roles. Somebody's going to have to do something about that someday before it's too late."

PAUL GLEN helps technical organizations to grow better leaders and managers to perform at their best. He is the author of the award-winning book *Leading Geeks*. Contact him at info@paulglen.com.

Soon, we are going to have to start preparing the next generation of technical leaders to accept responsibility, to carry forward. But so far, not too much is happening. I sense that this is the year when many organizations are going to start getting serious about planning for this inevitability.

But this time, as opposed to the Y2k event, legions of consultants, contractors and outsourcers won't solve the problem. If you want new and effective leaders, you will need to grow your own. It will become a tight market for buying talent, and the talent you're able to buy won't come with loyalty.

This leads us to several important questions. Can you do anything to grow new leaders? Can leadership be taught? Can it be learned? If so, how?

Of course, there are legioos of classes being offered on "leadership skills." But a five-day class, a personality inventory and a 360-degree evaluation will not inculcate tbe depth required to guide a smart, dedicated and, frankly, difficult technical staff.

In ber new book, *Leadership Can Be Taught* (Harvard Business School Press, 2005), Sharoo Daloz Parks captures the dynamic and difficult nature of guiding people to learn to lead. As part of her treatise, sbe documents the teaching of Ronald Heifetz of Harvard's Kennedy School of Government, who has been evolving an effective approach for nearly two decades. Tbe course he teaches is built around his book *Leadership Without Easy Answers* (Belknap Press, 1994).

The observations of both Daloz Parks and Heifetz resonate with my owo thoughts about what it takes to learn to lead. Here are a few key ideas that you should consider if you plan to grow your own leaders.

Leadership lessons are best learned by reflecting on personal experiences and integrating that insight with theory. Just reading a book won't make anyone a great leader. But just looking in the mirror is an equally hollow basis for learning.

Reflection requires a small learning community. This kind of learning requires deep thinking and personal honesty. This sort of developmental work is usually wrenchingly emotional and difficult. No pain, no gain. And it is best done in small groups of peers who have built a sense of mutual trust that makes it possible for them to be open with one another.

Leadership is best learned by midcareer professionals. While we may like the image of the young, energetic, natural leader, in the real world, learning from experience requires having enough experience to learn from. Without what Daloz Parks and Heifetz call "grist for the mill," a potential leader's understanding and insight are likely to be shallow at best.

Learning to lead requires extended engagement, not a quick fix. No one learns to lead at a boot camp. Leadership is about much more than skills. Learning leadership transforms the mind of the leader. Changing minds requires time and attention. It's not ao overnight transformation.

It's time that we in the technical industry begin to pick ourselves up from the pain of the past few years and start looking ahead. It's time to stop whispering about the coming leadership gap and start investing in our future.

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This leads us to several important questions. Can you do anything to grow new leaders? Can leadership be taught? Can it be learned? If so, how?

Of course, there are legions of classes being offered on "leadership skills." But a five-day class, a personality inventory and a 360-degree evaluation will not inculcate the depth required to guide a smart, dedicated and, frankly, difficult technical staff.

In her new book, *Leadership Can Be Taught* (Harvard Business School Press, 2005), Sharon Daloz Parks captures the dynamic and difficult nature of guiding people to learn to lead. As part of her treatise, she documents the teaching of Ronald Heifetz of Harvard's Kennedy School of Government, who has been evolving an effective approach for nearly two decades. The course he teaches is built around his book *Leadership Without Easy Answers* (Belknap Press, 1994).

The observations of both Daloz Parks and Heifetz resonate with my own thoughts about what it takes to learn to lead. Here are a few key ideas that you should consider if you plan to grow your own leaders.

Leadership lessons are best learned by reflecting on personal experiences and integrating that insight with theory. Just reading a book won't make anyone a great leader. But just looking in the mirror is an equally hollow basis for learning.

Reflection requires a small learning community. This kind of learning requires deep thinking and personal honesty. This sort of developmental work is usually wrenchingly emotional and difficult. No pain, no gain. And it is best done in small groups of peers who have built a sense of mutual trust that makes it possible for them to be open with one another.

Leadership is best learned by midcareer professionals. While we may like the image of the young, energetic, natural leader, in the real world, learning from experience requires having enough experience to learn from. Without what Daloz Parks and Heifetz call "grist for the mill," a potential leader's understanding and insight are likely to be shallow at best.

Learning to lead requires extended engagement, not a quick fix. No one learns to lead at a boot camp. Leadership is about much more than skills. Learning leadership transforms the mind of the leader. Changing minds requires time and attention. It's not an overnight transformation.

It's time that we in the technical industry begin to pick ourselves up from the pain of the past few years and start looking ahead. It's time to stop whispering about the coming leadership gap and start investing in our future.

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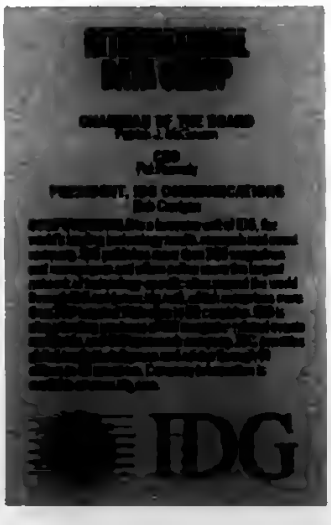

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In the previous setup, even though 80% of the hospitals were using human resources and payroll software from a single vendor — the former Infinium Software (since acquired by SSA Global Technologies Inc.) — those applications were installed on about 20 different databases. The disparate systems caused CHW to struggle whenever it needed to get data to make systemwide decisions or to start an initiative, Canning said. "We had to get each individual site to translate their data and try to make heads or tails of what was going on," he explained.

10-Year Journey

The Lawson implementation has overcome several obstacles so far, Canning said, including the effects of the failed SAP deployment, user resistance at some sites and the need to overhaul data standards to support the new software.

The ERP journey began in 1996, when CHW began working with SAP on a project to install ERP software in a planned central IT facility in Phoenix.

That plan was foiled by a failure to entice IT workers to move from California to Phoenix and problems with the SAP software. Users found SAP supply chain and financial applications installed at seven hospitals by 2000 "extremely complex" and not intuitive, Canning said.

In 2001, a new CEO oversaw a corporate reorganization to stem operational losses in 1999 and 2000, and that led to a decision to outsource CHW's IT operations to Perot Systems Corp. The operations are still outsourced to Perot.

The company had decided to abandon the SAP effort in 2001 after an internal study determined that the German vendor's applications were geared more toward a manufacturing environment than a services-based health care business, Canning said.

An SAP spokeswoman contended that the firm has a "strong footprint in health care." She blamed the move on executive changes at CHW.

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It also formed a project management office and four committees to hammer out the data standards for the Lawson human resources, finance, supply chain and payroll systems. The committees have since added key users from various hospitals who have helped sort out several sticky issues, like standardizing data elements in a chart of accounts and reducing standard pay codes from 700-plus categories to 250, Canning said.

The new software has helped CHW reduce the time it takes to close its books from 14 days at some hospitals to one day, he said. In addition, a recent project to consolidate the management of employee retirement plans from multiple vendors to one took four months; the same task would have taken a year using the older systems, Canning said.

Linda Pike, the Lawson materials management system administrator at St. Rose Dominican Hospital in Henderson, Nev., said the new software lets her department generate reports to monitor purchasing compliance under established contracts. Previously, her unit had to rely on administrators from a regional office in Phoenix to run the reports.

"We can retrieve that data from our system relatively easily using Lawson canned reports and tools we use with Excel," Pike said.

Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif., said that while SAP's ERP applications are usually well suited to hospital environments, good implementations also require good partners. Lawson works well with health care users, which can be atypical businesses, he said.

"The main reason ERP implementations fail in the modern era is not because the software is bad," Greenbaum said, "but because the party that is implementing it didn't understand how to do it." ▸

TIMELINE

Catholic Healthcare West ERP Project

1996	Catholic Healthcare West begins working with SAP on plan to standardize on the vendor's ERP software.
1998-2000	Installs SAP financial and supply chain software at seven CHW hospitals.
2001	Hires a new CEO and starts a turnaround initiative stemming from recent operational losses. Outsources IT operations to Perot.
2002	Continues with Lawson plans to use the vendor's supply chain, finance and HR applications to replace SAP software at its 40 hospitals.
2003	Completes pilot project using Lawson software.
2004-2005	Third-phase hospitals go live with Lawson.
2005-2006	Second-phase hospitals go live.
Early 2006	34 out of 40 hospitals will be live on Lawson.
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CHW Takes Creative Approach to User Resistance

TO HELP GARNER enthusiasm for its effort to implement new ERP software in its 40 health care facilities, Catholic Healthcare West officials are hosting "go live" celebrations for users.

The celebrations follow CHW's strategy of customizing its change management effort by tailoring the goals to the culture of the individual facility. For example, the company held a conservative celebration in an upscale Phoenix hotel for one group but took another unit to a lively Las Vegas show.

The deep dive into each hospital's "personality" has been key to the success of the $54 million project to install Lawson Software ERP applications to all CHW facilities by the end of next year, said Carol Tyler, director of change management communication and education at the health care provider.

Tyler, whose position was created in 2003 to help shepherd the project through inevitable "people" issues, has found the most user resistance at the seven CHW hospitals where an earlier SAP ERP installation had failed, she said. The SAP effort was halted after five years, in 2001, to favor of a move to Lawson software.

"They had a very, very strong distaste for a new IT project. They had been through [the SAP] project, and they didn't care for it," Tyler said. "We found ourselves facing demons from the past."

To combat the lingering problems, Tyler held meetings with top management at each of those hospitals and worked with key users in their finance, supply chain and human resources operations to understand their concerns, she said.

Then she tailored the communications plan to explain how the Lawson software could address their worries.

In addition, Tyler and the CHW ERP team have been attending monthly manager meetings at all 40 hospitals during the conversion to monitor progress.

She also created "change champion" positions at each hospital to promote the software, and she visits often with users who might have encountered problems. "There were different [job] levels in the facilities, and those levels weren't necessarily being heard as to what their requirements were," she said.

When Tyler learned that users at some hospitals preferred hearing about the project from on-site management rather than from headquarters officials, she enlisted local managers to take the lead during meetings.

In addition, CHW focused on designing a consistent "Lawson brand" in all of its communications about the project to ensure that users knew it was a new IT project.

"One of the scary things about change is it keeps changing. One way for me to anchor some support in Lawson is to provide familiarity," Tyler said.

Joshua Greenbaum, an analyst at Enterprise Applications Consulting, notes that in large ERP projects, change management is often more important than the software itself.

"Without a well-mannered change management process, everything else will roll up on you," he said.

– HEATHER HAVENSTEIN

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She also created "change champion" positions at each hospital to promote the software, and she visits often with users who might have encountered problems. "There were different [job] levels in the facilities, [and] those levels weren't necessarily being heard as to what their requirements were," she said.

When Tyler learned that users at some hospitals preferred hearing about the project from on-site management rather than from headquarters officials, she enlisted local managers to take the lead during meetings.

In addition, CHW focused on designing a consistent "Lawson brand" in all of its communications about the project to ensure that users knew it was a new IT project.

"One of the scary things about change is it keeps changing. One way for me to anchor some support in Lawson is to provide familiarity," Tyler said.

Joshua Greenbaum, an analyst at Enterprise Applications Consulting, notes that in large ERP projects, change management is often more important than the software itself.

"Without a well-mannered change management process, everything else will roll up on you," he said.

– HEATHER HAVENSTEIN

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FRANK HAYES ■ FRANKLY SPEAKING

Naughty and Nice

SANTA FROWNED thoughtfully at his desk piled high with letters. "King Kong," he said at last. "Suddenly, King Kong is big. Well, he was always big, but now everyone wants a giant gorilla, and we've got *nada*. Lloyd!" he called out. "Is there anything we can do about this last-minute Kong problem?"

"Already on it, chief," said the head elf as he walked by, clipboard in hand. "We've got five days before liftoff, and the design team is figuring out something right now. Besides, you don't have time to worry about that — you still haven't decided what to give all your 8,000-pound gorillas in the IT biz."

"You mean Bill Gates, right?" said Santa. "He's not only the world's richest nerd, he was also knighted this year."

"And now all he can talk about is Web Sir — uh, services," said the elf. "Let's give him and Steve Ballmer Xbox 360s, and they can experience that legendary Microsoft quality firsthand."

"Still failing your QC checks, eh?" said Santa. "Maybe we should give Steve Jobs an iPod Nano too, and see how long the screen remains unscratched."

"No wonder none of these guys can get their technologies into Nicholas Negroponte's $100 hand-cranked laptop," the elf said. "It's supposed to be durable. Anyhow, what about Larry Ellison, the man who owns everything?"

"How about a Martha Stewart sewing kit?" said Santa. "He'll have to stitch together Oracle, PeopleSoft, J.D. Edwards and Siebel. And maybe Martha's name will remind him not to do any more insider trading."

"Yeah, like that $122 million settlement wouldn't do that," smirked the elf. "Carly Fiorina's off the list now that she's gone from Hewlett-Packard, right?"

"She'll be back," Santa said, "even if it's just to testify in AMD's lawsuit that claims Intel strong-armed HP into not using AMD chips."

"Send her a DVD of Bill Gates' greatest courtroom hits," said the elf. "And speaking of former CEOs, remember Steve Case, the ex-America Online honcho? Lately he's been saying Time Warner should sell off AOL. Give him a diary — maybe that'll help him remember the past, like the fact that the whole messy AOL Time Warner merger was his idea in the first place."

"That sounds fine," Santa said.

"Now, what about all the people at the other end of the IT pipe? I understand those poor BlackBerry users might have their service cut off."

"Ooh, replacing that system could get pricey," said the elf. "Let's try paper cups and string as a stopgap, and work from there. And for the folks who got infected with rootkits by Sony CDs, what about gift certificates for the new, legalized Napster? Sony makes the worms and Trojans on peer-to-peer networks sound like they're almost worth the risk."

"Hmm," said Santa, peering at the elf's clipboard. "I think Google's stockholders got their presents early. They doubled their money this year when the stock price went from $200 tn $400. But what about the analysts who said a year ago that it couldn't go any higher?"

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FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Just a Little Bit Confused

Users at this company don't trust the sysadmins with backup tapes. "They order their own and, like Oliver Twist, we have to go cap in hand and ask for some more tapes," says a pilot fish there. "A new tape drive was added to a server, and we did our Oliver and asked for 20 new tapes to build the new backup tape cycle. When we came to use them, we discovered we had been supplied with 20 cleaning tapes – which meant one very clean drive, but no backup. The users are now ordering data tapes."

SHARK TANK

Whoops!

U.S. IT vendor is planning a new Australian HQ in subtropical Sydney, where winter temperatures might get as low as 5 degrees. "That's Celsius – about 39 degrees Fahrenheit," says a pilot fish there. "Over nine months, the plans were extensively debated and committee-fied until everyone was totally satisfied from practical, aesthetic, budgetary and environmental viewpoints. The plans were then submitted to the American head office – which summarily rejected them overnight." Why? "They said the roof wasn't strong enough to withstand the weight of snow in winter."

What Luck!

This on-call IT support team passes around a cell phone, and there's a list at the night-shift desk that tracks who has it, reports a pilot fish on the scene. But it's not a perfect system, as evidenced by one late-night call: "On-call help desk. This is Wilma." "Wilma? I thought Fred was on call." "No, it's me." "But the call sheet says it's Roman. Why isn't Roman .... Oh, never mind. It's a good thing you two have the same number!"

That's Not the Way It Works

Help desk pilot fish receives an e-mail from a user who says that her laptop's hard drive is full. Reports fish, "She then asked, very politely, when would be the best time to drop it off for a cleaning, as she was leaving for a business trip the next week."

Not a Creature Was Stirring . . .

Pilot fish gets a call from a nearly hysterical user: "Help! I think I killed my computer!" When fish arrives at user's desk, user explains, "I turned it on, but nothing happened. It just sat there!" Fish quickly determines that the PC is fine – it's just in sleep mode, and pushing the power button brings it back to life. How, exactly, did you "turn it on"? fish asks. "Just like I always do," replies user. "I shook the mouse."

SHARKY WON'T BE STIRRING anything but eggnog for a couple of weeks, but you can still send me your true tale of IT life at sharky@computerworld.com. You'll get a stylish Shark shirt if I use it next year. And you can still check out the daily feed, comment at Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at computerworld.com/sharky.

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